BRITISH MEDICAL JOURNAL

LONDON SATURDAY NOVEMBER 20 1937

THE TREATMENT OF HEART FAILURE*

GENERAL CONSIDERATIONS

BY

CRIGHTON BRAMWELL, M.A., M.D., F.R.C.P.

Physician to the Manchester Royal Infirmary

The term "circulatory failure" implies that the heart is unable to maintain an output of blood adequate to meet the requirements of the body. The heart is a pump, and the ability of a pump to maintain its output depends not only upon its mechanical efficiency but also upon the adequacy of the reservoir from which it is supplied. When the cardiac pump breaks down we speak of the condition as "heart failure," but when the well runs dry we speak of it as "peripheral failure." In opening this discussion I shall confine my attention to heart failure, and will leave the problem of peripheral failure to be dealt with by later speakers.

The Cardiac Reserve

Heart failure is a relative term: it signifies that the supply is unequal to the demand. The latter varies greatly according to the habits and mode of life of the

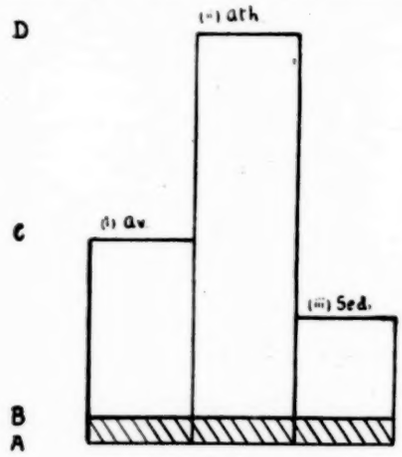


FIG. 1.

patient. The reserve of the healthy heart is amply sufficient to meet all contingencies. In the trained athlete during severe physical exertion the heart is able to increase its output sixteenfold (Hill, 1927): in patients with advanced heart failure it is unable to satisfy the requirements of the body even at rest. Between these two extremes all intermediate degrees of cardiac efficiency and insufficiency may be observed in health and disease.

Let me illustrate these facts by a diagram. In Fig. 1 (i) the column AC represents the capacity of the heart for work in a normal healthy subject, AB being the resting or basal requirement, and BC the additional amount of work which can be undertaken without distress—that is, the cardiac reserve. As the result of athletic training (ii) the "condition" of a normal person improves and he is able to undertake greater exertion without discomfort. The part CD represents the additional reserve of the trained athlete. The reserve of the man who leads a sedentary life (iii) and does not take sufficient exercise to keep himself "fit" falls below normal, just as that of the athlete rises above it. These three columns represent the variations which one finds in health, what we might speak of as the athletic (Ath.), average (Av.), and sedentary (Sed.) types.

The second diagram (Fig. 2) represents the variations in the cardiac reserve in a patient with advanced heart disease. Here, likewise, the reserve can be increased by treatment (ii); but if the patient neglects his treatment (iii) his reserve may fall to zero, or may even become a negative quantity—that is, the output of the heart may be less than the basal requirement of the body, which is higher in the cardiac than in the normal subject. Then, even at rest, he will manifest symptoms of cardiac insufficiency.

Disease of the heart muscle, the heart valves, or coronary arteries entails a reduction of the cardiac reserve proportional to the severity of the structural lesion. The resulting disability is of a permanent nature. Lack of exercise and toxic causes, such as focal sepsis and recent

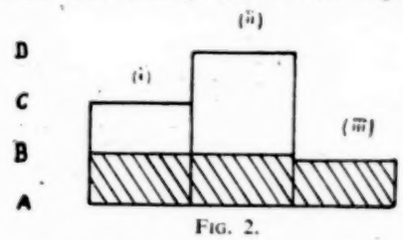


FIG. 2.

infection, add to the disability by producing a biochemical change in the buffering mechanism in the muscles. This reduces their mechanical efficiency; they work less economically, and for the same output of energy require a greater supply of oxygen than "trained" muscles, thereby increasing the demand upon the heart. The myocardium itself suffers in a similar way. The result is twofold—an increased demand upon the circulatory mechanism and a diminished capacity of the heart to meet this demand.

Whereas the structural lesions determine the basal disability, the additional impairment of function due to lack of exercise or to other causes may be partly eliminated by appropriate treatment. Lastly, it is important to remember that in all cases of heart disease the nervous factor plays a part. To this aspect of treatment I shall refer presently.

* Read in opening a discussion on circulatory failure in the Section of Pharmacology and Therapeutics, including Anaesthetics, at the Annual Meeting of the British Medical Association, Belfast, 1937.

Types of Heart Failure

In patients with heart disease the tolerance for exercise may be limited by dyspnoea or by pain. In the past it has been customary to restrict the term "heart failure" to congestive heart failure, a condition in which the venous pressure is raised and dyspnoea is the presenting symptom. I would strongly advocate that the term "heart failure" should include angina, in which the tolerance for exercise is limited not by dyspnoea but by pain. My reasons for making this suggestion are two. In the first place the term "heart failure" signifies inability of the heart to maintain a circulation adequate to meet the requirements of the body, and it is immaterial whether this inadequacy manifests itself by dyspnoea or by pain. The mechanism of production of these two symptoms is essentially the same. When the output of the heart is insufficient to meet the requirements of the active muscles lactic acid accumulates in the body and the hydrogen-ion concentration of the blood rises. This stimulates the respiratory centre, and dyspnoea is produced. When, on the other hand, the coronary arteries are diseased the effects of anoxaemia are first felt by the myocardium, and the patient's activities are limited by pain. My second reason is that the general indications for treatment in congestive heart failure and in angina of effort are identical—namely, to adapt the life of the patient to the limitations imposed by his damaged heart; in other words, to enable the heart to balance its budget. It is now generally agreed that angina is attributable to ischaemia of the heart muscle, and I would suggest that the term "ischaemic heart failure" be applied to this type of case.

Right and Left Ventricular Failure

When one considers the causes of heart failure it is obvious that in different types of heart disease the burden falls unequally on the two ventricles. In hyperpiesia, for example, the left ventricle has to bear the strain; and not until it has given way does the right ventricle become embarrassed. Conversely, in patients with mitral stenosis or emphysema the burden falls on the right ventricle.

Failure of the right ventricle leads to venous engorgement in the systemic circuit. The veins of the neck stand out like knotted cords, the liver enlarges, and oedema makes its appearance in the dependent parts. Failure of the left ventricle, on the other hand, leads to venous engorgement in the pulmonary circuit. This is well shown in a radiograph.

In most cases of heart failure both ventricles are involved to a greater or lesser extent; but, when the left ventricle alone is at fault, there may be intense congestion in the pulmonary circuit without any oedema or engorgement of the systemic veins. Left ventricular failure manifests itself clinically by certain signs, which merit special consideration. They are paroxysmal dyspnoea, presystolic gallop rhythm, and pulsus alternans.

Paroxysmal dyspnoea or, as it is sometimes called, "cardiac asthma" differs from the more common dyspnoea of effort in that it is not brought on by exertion but occurs at rest. It often wakes the patient from sleep in the early hours of the morning. The attack itself may closely simulate bronchial asthma. A slight attack may pass off in a few minutes, but a severe one will last half an hour or more and may develop into acute pulmonary oedema. In this condition adrenaline and other asthmatic remedies fail to give relief, but morphine acts as a specific. Twenty or thirty minims of nepenthe at bedtime will often ward off attacks.

Gallop rhythm has been called "the cry of the heart for help." It is distinguished from other forms of triple rhythm by the equal spacing of the sounds, and by the fact that it is palpable as well as audible (Bramwell, 1936).

Let us now consider those therapeutic measures which are applicable both to the congestive and to the ischaemic type of heart failure.

Rest and Exercise

Since physical exertion makes the greatest demand upon the heart, the most important consideration in the treatment of heart failure is rest.

During the past eight years I have had occasion to make a special study of patients in whom heart disease was complicated by pregnancy. As pregnancy advances it imposes an increasing burden upon the heart; consequently the great danger to which these patients are exposed is the development of heart failure. Over and over again in the course of this investigation I have been impressed by the fact that, when heart failure is recognized in its early stages, the response to treatment is extremely satisfactory; whereas in patients who are admitted to hospital as "urgencies" with fully developed heart failure the mortality is very high. The secret of success in treatment is early diagnosis.

In incipient heart failure slight curtailment of the normal activities may suffice, but in advanced cases, where the patient is oedematous or is subject to anginal attacks on slight exertion, complete rest for a period of several weeks may be necessary to enable the exhausted heart to build up a reserve. Under these circumstances, the patient must be confined to bed and attended by competent nurses, who will feed him, wash him, and lift him when he wishes to change his position or to use the bed-pan. He must not be allowed to make any physical effort himself, or even to attempt to assist his nurses.

Dyspnoeic patients are more comfortable sitting up than lying flat. Some, especially the obese, find it easier to sleep in a chair, leaning forward with the forearms supported by a table and the head resting on the wrists. Whatever position the patient finds most comfortable should be adopted; and, if in bed, a bed-rest or an adjustable bed is essential in order that the whole spine, from the pelvis upwards, may receive adequate support. The feet and knees also should be supported to prevent him from slipping down. In patients with left ventricular failure this is especially important, since assumption of the horizontal position appears to be a determining factor in precipitating an attack of nocturnal dyspnoea. Skilled nursing is the most important consideration in the treatment of heart failure, for it is the only means we have of ensuring complete bodily rest.

During convalescence massage to the limbs and back is helpful in promoting the venous return to the heart and in restoring tone to muscles which have become flabby through disuse. This should be followed by resistance exercises and finally by graduated exercise.

Prophylaxis

When convalescence is complete the future still remains to be considered, and precautions to prevent a recurrence must be observed. The patient should be warned against over-exertion on the one hand and insufficient exercise on the other. Whereas the former may precipitate a further breakdown, the latter, as I have already pointed out, imposes an additional burden on the damaged heart. The advice which I give to patients with chronic heart disease may be summarized by saying that they must

lead a life of moderation in all things, taking regular exercise within the limits of their tolerance, but never making any sudden effort which entails exerting their full strength, or which gives rise to dyspnoea or precordial discomfort. For example, they must never run for a train, struggle against the wind, or attempt to start their motor car by hand. They must stop eating before they are satisfied, and sit quietly in a chair for half an hour after meals.

When walking or participating in any form of physical exertion the patient must set the pace. He must never attempt to keep up with others fitter than himself. The problem of suitable employment often presents insuperable difficulty. As in the case of physical exertion, the patient should, if possible, be his own master, and able to go to work or stay away at will.

Stair-climbing should be eliminated. A bungalow is the ideal residence for these patients. Failing that the bedroom should be on the ground floor. One whole day in bed each week is often helpful. It enables the heart to build up sufficient reserve to ward off a further breakdown.

A special danger when the cardiac reserve is limited is the added strain upon the heart of intercurrent infection. An attack of bronchitis, influenza, or even a common cold necessitates immediate confinement to bed.

Obesity imposes an additional burden on the damaged heart. Moreover, it establishes a vicious circle. By diminishing the cardiac reserve it limits exercise, and lack of exercise tends to increase obesity. To break this circle a diet low in fats and carbohydrates should be prescribed, together with massage and carefully graduated exercise.

Let me give you two examples of the dangers to which patients with chronic heart disease are especially liable. In many towns the approach to the railway station is an uphill slope. In order to ensure that passengers will arrive in time, the clock outside the station is kept five minutes fast. Having allowed himself ample time to catch his train our patient arrives at the station approach. Glancing at the clock he is horrified to find that he is late. He dashes up the slope and collapses at the top.

My second example is one which constantly recurs in the course of my practice. A business man tells me that the only time he experiences discomfort is when walking to the station after breakfast. Throughout the rest of the day he is unaware of any disability. The reason is obvious. He likes to lie in bed until the last possible moment; he bolts his breakfast and dashes off to catch his train. It is a sound rule for the patient with incipient heart failure, either of the congestive or of the ischaemic type, to sit quietly in a chair for at least twenty minutes after meals.

I should like to have devoted more time to the problem of rest and exercise; for it is, to my mind, the fundamental consideration in the treatment of heart failure. There are, however, other important aspects of the subject to which I must briefly refer. The questions of diet and of drug therapy will be dealt with by other speakers who are to follow me in this discussion. I therefore do not propose to refer to these points except incidentally, and will now pass on to consider another general problem of great importance—namely, treatment of the associated nervous phenomena.

The Nervous Factor

In the treatment of all cases of heart failure, but especially in those of the ischaemic type, the nervous aspect calls for most careful consideration. The typical anginal subject is by no means a neurotic; but some patients are more highly strung than others, and the nervous pattern of the individual is largely instrumental in determining the clinical picture, which it may modify in various ways. In the first place the threshold of sensitivity for pain varies in different people. Other things being equal the limitations imposed on the patient's activities are much greater in the hypersensitive than in the hyposensitive subject. Secondly, in the irritable "nervy" type of individual an anginal attack may be precipitated by a relatively trivial emotional stimulus, since the detonating mechanism which fires off an attack lies dangerously near the surface. Minor annoyances will, in him, suffice to produce an emotional storm adequate to provoke an attack; whereas in the calm placid person a much more massive stimulus is required to do so. Thirdly, there is the element of anxiety, for angina is proverbially associated with sudden death.

We can do much to combat the nervous factor and thereby to reduce to a minimum the aggravation of the symptoms for which it is responsible. Bromides, luminal, and other cerebral depressants make the patient less liable to attacks and render the attacks less distressing when they do occur. Evans and Hoyle (1933) have shown that the cerebral depressants are the only group of drugs which, when given in a routine manner, reduce the frequency of attacks.

In a nervous subject stage-fright induced by having to make an after-dinner speech, or, in an irritable business man, shortness of temper provoked by a heated discussion at a board meeting, may be warded off by a prophylactic dose of bromide. In passing I have referred to the use of opiates in the treatment of paroxysmal dyspnoea. Similarly in acute congestive heart failure morphine is a most valuable drug. By allaying both physical discomfort and mental anxiety it helps to achieve that peace of body and mind which is so essential to effective treatment. When, in acute heart failure secondary to auricular fibrillation, urgency demands the administration of digitalis by the massive-dose method I generally give a hypodermic injection of 1/4 grain of morphine before the first dose of digitalis. Many practitioners fail to realize that the danger of giving an opiate to cardiac patients may be far less than the danger of withholding it.

Anxiety figures prominently in the picture of heart disease. To disregard this "complication" and to make no attempt to alleviate the mental suffering is to neglect an important aspect of treatment. To achieve success in this sphere the physician must possess both sympathy and understanding. He must be able to put himself in the patient's shoes and to regard the case from the patient's point of view. When illness is prolonged the possible physical damage that may result from allowing a man to return to his work too soon must be carefully weighed against the mental trauma when he sees his business going to pieces and the future of his dependants at stake.

Surgical Measures

I hope that later speakers will refer to the surgical measures which have been employed in the treatment of heart failure. These merit consideration, though, in my opinion, they must still be regarded as being in the experimental stage. Complete thyroidectomy by lowering the basal metabolism reduces the heart's liabilities, and might therefore be indicated on theoretical grounds. In congestive heart failure the results of this operation have not come up to expectation, but in angina they have proved more promising.

Operations such as sympathectomy serve to relieve pain, but I cannot help doubting whether these procedures are justified, except in cases where all other methods of treatment have failed; for in angina pain is a danger signal which warns the patient that he is overtaxing his heart, and if we relieve the pain without eradicating the cause of the disease we may be depriving him of his only safeguard.

Minor surgical procedures such as paracentesis of the chest or abdomen may be necessary when the heart is embarrassed by large effusions.

Venesection

It is no exaggeration to say that the therapeutic procedure which earned for our predecessors the nickname of "leech" is an emergency measure of the greatest value. It is equally applicable to right and to left ventricular failure. The indications which should lead one to employ it are venous engorgement with cyanosis in the former and acute pulmonary oedema in the latter.

With regard to the technique of this small operation it is desirable in nervous subjects to anaesthetize the part with novocain. For constricting the arm the sphygmomanometer bandage is much more convenient than a rubber tourniquet. With it one need not employ a pressure of more than 50 mm., and this can be easily regulated. The patient should be made to clench and unclench his fist a few times, so that the veins stand out, and for the actual puncture I find the tapered needle designed by French a great improvement on the common type cut from a tube of uniform bore. To prevent clotting the needle may be sterilized by heat and carried in a tube of sterile liquid paraffin. It should be inserted bevel side downwards. The vein should be steadied between the forefinger and thumb of the left hand, and in fat persons in whom it is deeply buried it must be located by touch. The blood may be allowed to flow under its own pressure or aspirated off by connecting the needle to a receiver in which a slight negative pressure is maintained by means of a pump.

Conclusion

In Fig. 3 I have attempted to summarize diagrammatically the therapeutic possibilities in the treatment of heart failure of the ischaemic type. A similar diagram could be devised for the congestive type.

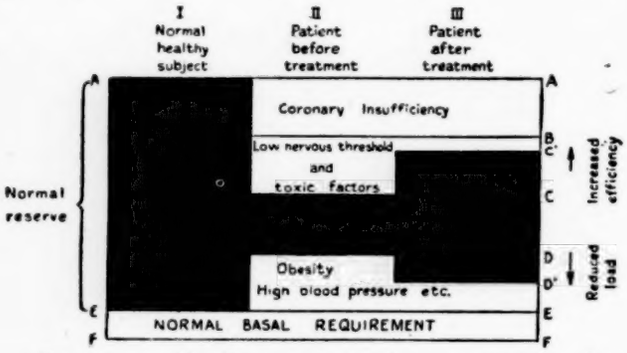


FIG. 3.—In this diagram the black area represents the cardiac reserve in I, the normal subject; II, the patient with angina before treatment; and III, the same patient after treatment.

In columns II and III the various factors which limit the cardiac reserve in the anginal patient are indicated. This limitation is due in part (DE) to an increased basal requirement and an increased cardiac load, and in part (AC) to impaired myocardial efficiency.

In the normal healthy subject (I) the cardiac reserve (AE) far exceeds the basal resting requirements of the body (EF). In the patient suffering from angina (II), on the other hand, the cardiac reserve (CD) is greatly reduced. The reduction is in part attributable to impaired efficiency of the heart itself (AC). This depends on various factors, of which the most important is insufficiency of the coronary circulation (AB). Structural changes in the coronary arteries and in the myocardium are of a permanent nature, and therefore beyond the scope of therapeutic measures. As I have already pointed out, however, the nervous factor is of great importance in determining not only the sensitivity to pain but also the liability to attacks. This can, in part at least, be controlled by cerebral depressants. Similarly we may be able to eliminate toxic factors—such, for example, as tobacco and focal sepsis. By these means the efficiency of the damaged heart can be increased from DC to DC'. We may likewise hope, by suitable treatment, to lighten to some extent the load imposed upon the heart by such factors as obesity and high blood pressure, thereby increasing the cardiac reserve from CD to CD'. That marks the limit of possible therapeutic achievement. When it has been attained the patient must be content to limit his activities to meet his reduced exercise tolerance C'D'.

Briefly our aim in treatment is to enable the heart to balance its budget by increasing its intrinsic assets and by reducing its extraneous liabilities.

REFERENCES

Bramwell, C. (1936). *Lancet*, **1**, 189.
Evans, W., and Hoyle, C. (1933). *Quart. J. Med.*, **26**, 311.
Hill, A. V. (1927). *Muscular Movement in Man*, New York.

THE ASSESSMENT OF "STATE OF NUTRITION" AND THE DETECTION OF MALNUTRITION*

BY

W. R. AYKROYD, M.D.

Director of Nutrition Research, Indian Research Fund Association, Coonoor, S. India

In many parts of India the poorer classes—that is, the vast majority of the population—live on a diet largely composed of rice or millet, which contains in addition a little pulse and very small quantities of vegetables, but no milk, eggs, or meat. Such a diet is thoroughly deficient, in terms of "generally accepted" Western standards, and, apart from qualitative defects, the diet of the poorer classes is often insufficient in quantity. *A priori*, we should expect to find plenty of "malnutrition" resulting from diet deficiency among Indian children on a rice staple. I propose to give an outline of certain investigations of the "state of nutrition" of Indian children indicating the direction in which we are moving. Our work is still in the preliminary stage.

We started the inquiry with no idea of what we should find, since practically no previous work on the subject had been carried out in India. This is a very agreeable situation for the research worker, nowadays a somewhat rare one. A little scepticism about "generally accepted" dietary standards is pardonable; conceivably investigation would reveal bouncing, thriving children living on a diet which outrages all the principles of modern dietetics, to the consternation of the nutrition commissions of the League of Nations. I may say at once that on the whole our observations confirm modern ideas about diet. Indeed,

* Read in the Section of Nutrition at the Annual Meeting of the British Medical Association, Belfast, 1937.

a single glance at a group of poor South Indian children eliminates the adjectives "bouncing" and "thriving." One may perhaps feel that current dietary standards make unnecessarily high demands at certain points, but there can be little doubt that a diet almost exclusively composed of rice is not the best one for growing children.

In studying "state of nutrition" we have used anthropometric, clinical, and biochemical methods. In the first category fall simple measurements of height and weight. In the absence of reliable and sufficient data we began by weighing and measuring groups of Indian children. We found that the South Indian child is small and light compared with the European and the American child. In the chart three weight–age and height–age curves are compared, based respectively on the measurement of British boys, rice-eating South Indian boys, and an interesting group (boys) living in a tapioca-eating district in Travancore. The curves for British boys are based on

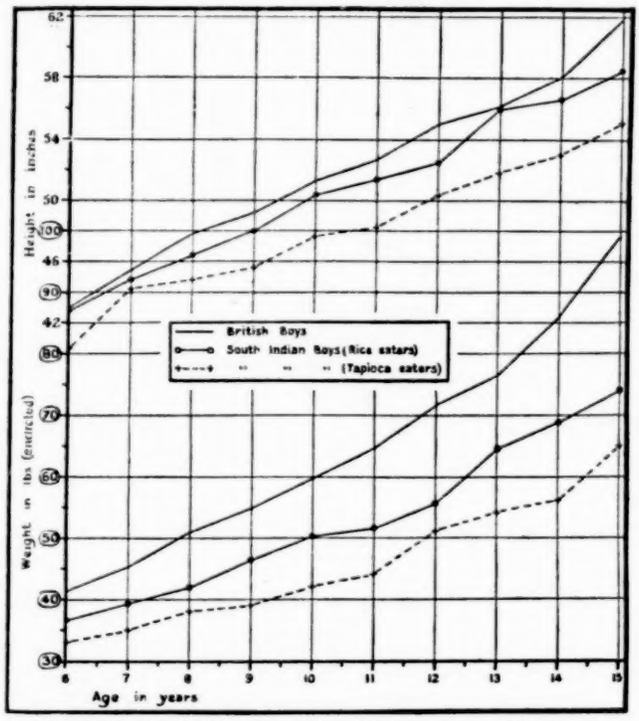


Chart showing height–age and weight–age curves (6–15 years) of British and South Indian boys (rice eaters and tapioca eaters).

data for elementary and secondary schools given in the Annual Report of the Chief Medical Officer of the Board of Education, 1927.

Relation of Height and Weight to Diet

There has been a great deal of controversy about the relation of height and weight to diet and "state of nutrition." Obviously there is no great disadvantage in being small, provided one is healthy and active, and a small wiry child may be in the best of physical condition. There is also the influence of heredity to be considered. But a close relation may exist between the development of *groups*, as evidenced by average height and weight, and the nature of the diet. Take the tapioca-eating children, whose height, weight, and state of nutrition were investigated by my assistant, Dr. B. G. Krishnan. These children, so far as we know, are of similar racial stock to the rice-eating group, yet they are much smaller. Their diet is composed almost exclusively of tapioca. Tapioca is a root and not a cereal, and contains only about 1 to 1.5 per cent. of protein, besides being a poor source of vitamins and mineral salts. If you consume two pounds of tapioca a day (1,500 calories) your intake of protein will be about twelve grammes, an amount far below that which the textbooks state is necessary for life. These children do, however, survive, in defiance of the science of dietetics, but only just. In plain language, they are stunted children of miserable physique. It seems reasonable to explain the difference between their development and that of the rice-eating children in terms of diet. May we not go further and assume that *some* of the difference between South Indian children and English children is due to the same cause?

South Indian children, as compared with American and British children, have a low average "weight for height." This is partly due to relative lack of muscle and fat. We have weighed and measured some hundreds of children in residential homes in South India and find that these children are on the average heavier for a given height than day-school children. The advantage in weight is evidence of better feeding and a *better* state of nutrition. The institutional children are not well fed; in many hostels only about 4 to 6 shillings per child per month is available for food. But at least they regularly consume three meals a day, while children of the poorer classes in the general population may be less fortunate in this respect. The fact that day-school children are on the average thinner than the children fed on diets costing three to four rupees per month throws a light on the diet and economic conditions of the former.

Ceylon is inhabited by a number of distinct racial groups. Nicholls (1936) has found that within each racial group upper-class children are taller and heavier than lower-class children and that averages in each social group are much the same for the various races. In other words, the level of average height and weight is associated not with race but with economic status, and thus with diet. In India we have carried out a series of experiments on the effect of milk on the growth of school children. The very rapid increase in height and weight which takes place when milk is regularly consumed shows that Indian school children of the poorer classes do not normally realize their potentialities for physical development.

Deficiency Diseases

In almost any day school in South India cases of "angular stomatitis" can be found. This condition of the labial angles, which is usually associated with lesions of the interior of the mouth, has been fully described elsewhere (Aykroyd and Krishnan, 1936). I have no space to discuss the aetiology of this interesting disease; it is sufficient to say that it is a pellagra-like condition, cured by foods rich in the P-P factor such as yeast, eggs, and milk, and that it commonly occurs in rice eaters when diet is deficient in milk and other protective foods. It is not true pellagra, because it is not associated with other characteristic signs of pellagra—for example, symmetrical dermatitis.

Xerophthalmia, evidenced by Bitot's spots, is comparatively common in South Indian children. Another condition related to diet deficiency that is frequently seen is the follicular keratosis of the skin which Nicholls (1933) has called "phrynoderma" or "toad-skin." We have investigated the incidence of angular stomatitis, Bitot's spots, and phrynoderma in large groups of children, and this appears to be a simple and useful method of assessing "state of nutrition" in countries where malnutrition is extreme. The symptoms mentioned are most common in

children of the poorer classes and in badly managed boarding schools in which catering arrangements are left to an indifferent subordinate. In certain parts of India—for example, in the Punjab, where the diet is based on wheat and milk—they are seen rarely or not at all.

The A.C.H. Index of Nutrition

Our investigations have brought to light a most interesting association between "selection" by the A.C.H. index and the presence of signs of deficiency disease. The A.C.H. (A = arm, C = chest, H = hip) was devised in America by Franzen and Palmer (1934). Its rationale is as follows: A large number of children (over 10,000) were examined and their "state of nutrition" assessed clinically by experienced paediatricians. In the same children a complete set of measurements was taken, including shoulder breadth, hip width, chest width and depth, height, weight, arm and calf girth, and the thickness of the subcutaneous tissues in different parts of the arms and legs. By statistical treatment the correlation between clinical malnutrition and the various measurements was worked out. Ultimately it was found that a certain relation between arm, chest, and hip measurements was associated with a diagnosis of malnutrition, other measurements being discarded as unnecessary for most practical purposes. In practice the observer measures the circumference of the arm at the highest point of the biceps with the forearm flexed and extended, the antero-posterior diameter of the chest during inspiration and expiration, and the width of the hips from trochanter to trochanter. He then consults a chart which gives "the maximum difference between arm girth and chest girth" for a certain hip width. If the difference is less than the figure in the chart the child is "selected" as suffering from malnutrition. The index, then, purports to pick out children to whom an experienced physician would affix the label "malnutrition." Such children have "small amounts of musculature and fatty tissues relative to body build." Statistical analysis revealed that American physicians, in assessing "state of nutrition," pay more attention to the state of muscular and adipose tissue than to any other sign or symptom. The A.C.H. chart has been reproduced in full in an earlier paper (Aykroyd and Rajagopal, 1936).

The index is said to "select" some 10 per cent. of groups of average American children. Applying it to large groups of Indian children we found that some 25 per cent. were "selected." Now it is to be observed that the term "selected," applied to Indian children, may mean precisely nothing. We have taken a system of measurement based on American children and used it on children of a different race, and it cannot be assumed that a system which purports to pick out malnourished children in the United States of America will do the same in Madras. But in fact the A.C.H. index *does* "select" malnourished Indian children rather successfully. In the first group of 1,145 children 235 showed clinical signs of malnutrition (phrynoderma, Bitot's spots, and angular stomatitis). Of these, 150 (63.8 per cent.) were "selected," while of the remaining 910 not showing symptoms only 144 (15.8 per cent.) were "selected."

Our next step was to enlist the help of a statistician, Professor K. B. Madhava of Mysore University. 3,742 cards (3,232 boys and 510 girls) giving A.C.H. measurements and a record of the presence or absence of clinical signs were submitted to him, and on the basis of these data Professor Madhava has constructed two new A.C.H. criterion tables, which we may call Coonoor Index No. 1 and No. 2 respectively. A new series (904 boys) was examined and the results analysed in terms of the original A.C.H. Index and Coonoor 1 and 2. In this group the association between "selection" and clinical signs was closer than in the previous group. The American index "selected" 80 per cent. of those showing signs, while Coonoor 1 "selected" 81.7 per cent. As before, a much smaller percentage of those free from signs was "selected" (13.5 per cent. American A.C.H.; 15.2 per cent. Coonoor 1). For use in South India Coonoor 1 is preferable to the American A.C.H. in that the hip-width measurements in the criterion table correspond more closely with the smaller measurements of Indian children. For example, the lowest hip-width measurement given in the American table is 20 cm., all cases with this measurement or less being pooled into a single group. Of the South Indian children examined nearly 50 per cent. had hip widths below this figure.

Coonoor Index 2 includes only three measurements: the usual hip measurement and a single measurement of arm and chest respectively. It "selected" a much higher proportion of children with signs (95.4 per cent.). It also, however, "selected" more "free" cases (65.4 per cent.). Constructed on the same principles as the other indices, but designed statistically so that the basis of "selection" is maximum agreement with the measurements of children with clinical signs, it may, as it were, plough a deeper furrow, bringing to the surface not only cases showing visible symptoms of deficiency disease, but also others whose bodies are being influenced by the same deficiencies in a less severe "subclinical" degree.

The association between symptoms and "selection" affirms the validity of the A.C.H. and related indices. Conversely, it provides additional evidence that the symptoms themselves are due to diet deficiency. Further, Professor Madhava's analysis suggests that the *only* system of external measurement which can be associated with clinical signs of deficiency disease is a disparity between arm girth and hip width.

The meaning of the A.C.H. index appears to be something like this: malnourished children in general have thinner arms and a *greater* antero-posterior diameter of the chest than well-nourished children. This is probably another way of saying that the malnourished child is thin and *squat*. While no system of external measurements can be expected to correspond exactly with physiological and pathological states, I feel that the association between certain measurements and the existence of deficiency disease opens up a new field for the study and detection of malnutrition. It would be interesting to carry out investigations in England with the various indices.

Fuller accounts of these investigations have appeared, or are about to appear, in the *Indian Journal of Medical Research*. Most of the field-work with the indices was carried out by my assistant, Dr. Rajagopal.

In presenting a paper to the Nutrition Section of the B.M.A. one cannot omit mention of the part played in the development of nutrition research in India by the President of the Section, Sir Robert McCarrison. We are to-day attempting to build on the foundations securely laid by him during the years he spent as Director of the Coonoor Nutrition Research Laboratories.

REFERENCES

Aykroyd, W. R., and Rajagopal, K. (1936). *Indian J. med. Res.*, **24**, 419.
—— and Krishnan, B. G. (1936). Ibid., **24**, 411.
Franzen, R. H., and Palmer, G. T. (1934). *The A.C.H. Index of Nutritional Status*, Amer. Child Health Assoc., New York.
Nicholls, L. (1933). *Indian med. Gaz.*, **68**, 681.
—— (1936). *Ceylon. J. Sci.*, Sect. D4, Pt. 1, 1.

VITAMIN C NUTRITION IN CASES OF HAEMATEMESIS AND MELAENA*

BY

SAMUEL LAZARUS, M.D., M.R.C.P.

Extra Dispensary Physician, Western Infirmary, Glasgow

Haematemesis and melaena, as a complication of peptic ulcer, occur in a considerable number of cases. Hurst and Ryle (1937) record that approximately 30 per cent. of their cases of peptic ulcer were thus complicated. In some instances haemorrhage is the first indication of the disease. More often, however, it takes place in patients who have had gastric symptoms for a considerable time and have received dietetic treatments. Further haemorrhages occur in many cases—for example, in 8.4 per cent. of 130 reviewed by de la Viesca (1935).

Archer and Graham (1936) demonstrated that six out of a series of nine patients suffering from peptic ulcer were in a subscurvy state. It is well known that wounds in patients with actual clinical scurvy heal poorly, and that healed ulcers, fractures, and scars may actually break down in those suffering from this nutritional defect. It was therefore decided to investigate the state of vitamin C nutrition in a group of patients in whom haematemesis and melaena had occurred as a complication of peptic ulcer in order to determine whether these conditions were associated with the presence of the subscurvy state.

Material

The fifteen patients investigated were admitted to the Bispebjerg Hospital, Copenhagen, during the period November, 1936, to February, 1937. Twelve of them were in Department B under the care of Professor Meulengracht. All were given an adequate purée diet and ferrosi tartras from the first day of admission. This method of treatment was introduced by Meulengracht in 1931 and reported on in 1935 and 1936. Six of these cases also received alkali from the first day of admission. Three patients were under the care of Dr. Knud Secher in Department C. These were given half-litres of milk and oatmeal soup from the first day, the quantities being rapidly increased to one and a half to two litres in seven to ten days, when additions of semolina, eggs, and potatoes were made. Ferrosi tartras was given from the first day, but no alkali. The clinical diagnosis of haemorrhage from a peptic ulcer was made in thirteen cases and confirmed radiologically in four of these. One case (Q) was complicated by a history of chronic alcoholism, and one showed a general haemorrhagic tendency; the notes of this last case are given below in full.

Procedure

The amount of ascorbic acid excreted in the urine of these patients during twenty-four hours was estimated by Harris and Ray's (1933) modification of Tillman's 2:6-dichlorophenol indophenol method. The estimations were carried out twice during this period. The urine was stored in dark glass bottles in a cool place after the addition of 10 per cent. by volume of glacial acetic acid. Despite these precautions urine kept under these conditions was found to lose 10 to 15 per cent. of its estimable ascorbic acid content in eighteen hours. In twelve of the cases estimations were carried out at intervals of three days for a preliminary period of fourteen to twenty days after admission. The following procedure was then adopted during a test period. On the first day of the period the patients were given 700 mg. of synthetic ascorbic acid (Roche Products Ltd.), on the second and third days 1,000 mg., and on the fourth day 700 mg.—all by the mouth. The excretion of ascorbic acid in the urine was estimated each day.

The amount of ascorbic acid excreted in the urine depends on the amount stored in the body tissues and that taken in food. In normal subjects on a uniform dietary the figures are constant from day to day. A diet rich in vitamin C leads to an increased excretion of ascorbic acid, and vice versa. The minimum amount of vitamin C necessary to prevent the first objective signs of scurvy occurring, as determined by Göthlin (1931 and 1934), is that contained in 42 to 60 c.cm. of orange juice or 19 to 27 mg. of ascorbic acid. Abbasy, Harris, Ray, and Marrack (1935) found in a group of healthy adults that if a basal diet containing only moderate amounts of vitamin C was supplemented by the addition of 15 mg. of ascorbic acid (half an orange) the urinary excretion of ascorbic acid in a period of three to four weeks was stabilized at a titre of 15 mg. per day. This represents a state of equilibrium. These workers also noted that when this state of equilibrium had been reached a test dose of 700 mg. ascorbic acid, given by mouth, resulted in an increase in the urinary excretion of ascorbic acid to approximately 50 mg. A daily excretion of 13 mg. (uncorrected titre) and an increased urinary excretion up to 50 mg. after the ingestion of 700 mg. of ascorbic acid were thus established as the minimum figures for healthy individuals receiving adequate amounts of vitamin C in the diet and having adequate tissue stores.

Archer and Graham (1936) adopt different standards. They estimate the degree of saturation of their subjects. Doses of 1,000 mg. of ascorbic acid are given by mouth on two consecutive days and the percentage excretion of a test dose of 400 mg. is estimated on the third day and compared with control subjects. The test period as adopted in the investigation of the twelve patients here reported permits of a comparison of the results with both the above groups of investigators. A satisfactory correspondence is found when the results are read against both standards.

Results

These are given in Table I. Four control estimations were carried out.

Control 1.—A male patient, aged 29, with bilateral pes cavus and mild pains in the calves. He excreted 13 mg. ascorbic acid in the urine whilst on the ordinary ward diet. After the first test dose the excretion rose to 22 mg., and after the second to 179 mg.; he excreted 73 per cent. of the third. It was not necessary to proceed with the fourth test dose.

Control 2.—This test was carried out on me after a period of ten days during which two small oranges were added daily to a standard diet; 31 mg. ascorbic acid was excreted daily under these conditions, and the ingestion of 700 mg. caused an excretion of 280 mg.

Control 3.—This was also carried out on me, twenty days after the withdrawal of the oranges from the diet; 16.1 and 16.7 mg. ascorbic acid were excreted daily. The first test dose resulted in an excretion of 82.2 mg., and 66 per cent. of the fourth test dose was excreted.

Control 4.—A healthy male clerk aged 20. It was only possible to estimate the response to the first test dose. This was 50 mg.

The daily excretion figures and responses to the first test dose of ascorbic acid in these control subjects corre-

* This work was carried out during the tenure of the Faulds Fellowship in Medicine at the University of Glasgow.

spond with those found by Harris and his co-workers in subjects whose diet was known to contain adequate amounts of foods rich in vitamin C. The daily excretion and the responses to test doses of twelve of the cases of haematemesis are tabulated, together with those of the controls.

It will be observed that in Cases B and E the daily excretion before the test period was more than 13 mg. and that the ingestion of the first test dose of 700 mg. ascorbic acid was followed by a slight rise in the urinary excretion. These two cases, B and E, are not below the minimum standards of excretion. The other ten cases all excreted less than 13 mg. of ascorbic acid daily. None of these cases responded with a significant urinary excretion to the first test dose of 700 mg. ascorbic acid, and are thus markedly below the standards of adequate vitamin C nutrition. Seven excreted less than 50 mg. after the ingestion of the second test dose—1,000 mg. They were thus in a more severe state of vitamin C subnutrition than the two cases which responded to the second test dose. Cases D and G are remarkable in that no increased excretion of ascorbic acid in the urine resulted after the ingestion of the third test dose—1,000 mg.—that is, after a total of 2,700 mg. had been taken. During the preliminary period the average excretion shortly after admission was 7.3 mg. In some cases the daily excretion fell during the first ten days, whilst in others it rose steadily: the resultant average excretion at this time was also 7.3 mg. Before the test period the average excretion was 11.8 mg. This preliminary period is too short to show decisively whether the purée diet was adequate in vitamin C content, but it would appear that it is not so during the winter months. Kelly (1936) found that eight cases of peptic ulcer had an average excretion of 13 mg. of ascorbic acid on admission to hospital, and that after one week on an "ulcer diet" the daily excretion had fallen to 9 mg. The significance of the spontaneous daily excretion figures, however, is not clear.

Examining the percentage excretion of the last test dose one notes that in all the cases the responses were below those found in the control subjects. In three of them over 50 per cent. of the 700 mg. ingested was excreted. In the other nine cases values ranging from 4.6 per cent. to 48 per cent. were obtained. Archer and Graham found that after two test doses of 1,000 mg. ascorbic acid six out of their nine cases of peptic ulcer excreted 3.4 per cent. to 44 per cent. of a test dose of 400 mg. The range of values obtained in the cases here reported is thus seen to be similar to that recorded by Archer and Graham. The two sets of figures are not, however, strictly comparable. In addition to the difference in the first test doses it is known that the percentage excretion in the urine of an ingested dose of ascorbic acid is lower when large doses are taken (Johnson and Zilva, 1934). It can be stated that of the twelve cases investigated in this manner ten were suffering from vitamin C subnutrition or "subclinical scurvy." In seven this was of a severe degree.

TABLE I.—*Results of the Examination of Twelve Cases of Haematemesis and Melaena due to Peptic Ulcer*

Case	Duration of Symptoms	Preliminary Period			Intake of Ascorbic Acid by Mouth Daily (mg.)				General Remarks
		3rd-5th day	5th-14th day	14th-19th day	700	1,000	1,000	700	
		Excretion of Ascorbic Acid in Urine in 24 Hours							
		mg.	mg.	mg.	mg.	mg.	mg.		
Control 1 ..				13.0	22.0	179.0	729.0	+73%*	
Control 2 ..				31.0	280.0	N.E.	N.E.		
Control 3 ..			16.7	16.1	82.2	N.E.	N.E.	66%	
Control 4 ..				N.E.	50.0				
B	2-3 years			17.5	21.0	N.E.	N.E.	47%	Fever, alkali
C	3-6 months		11.2	8.4	11.9	N.E.	N.E.	42%	Alkali
D	5 years	13.2	9.0	10.7	15.4	15.0	16.4	4.6%	Alkali, 9th Haematemesis
E	4 „	12.8	9.4	15.9	30.0	68.7	638.0	+64%	Alkali, 6th Haematemesis
F	11 „	5.9 ; 6.9	6.0 ; 8.0	9.0	9.8	N.E.			Fever, alkali
G	8 days	9.2 ; 6.0	6.7	11.4	13.4	14.4	20.4	+2%	Alkali
J	3 years		11.5	11.0	10.9	94.2	151.0	40%	
K	10 „		8.6	13.0	14.0	42.8	275.3	54%	Fever
L	2 „		7.0	8.9	8.4	28.3	96.0	40%	Fever
M	8 „	8.9	5.7 ; 6.6	8.4	11.1	30.0	340.0	61%	
O	7 „	3.8	4.6 ; 4.6	6.8	8.5	15.6	253.0	38%	Fever
Q	18 „	5.1	7.0	9.7	17.0	19.7	275.0	48%	
Average results		7.3	7.3	11.8					

Cases J, K, and L were treated in Dr. Secher's Department. N.E.—Not estimated.

* Expressed as a percentage of the amount ingested in the twenty-four-hour period.

Investigation of Three Cases of Haematemesis

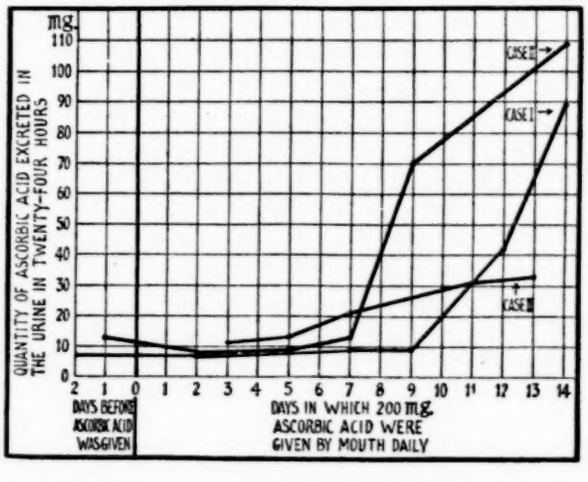
The vitamin C nutrition of three cases of haematemesis was investigated by a different method. Four, nine, and twelve days after the haemorrhage two tablets of redoxon (a preparation containing synthetic ascorbic acid), corresponding to 200 mg. of ascorbic acid, were given twice daily by mouth. The urinary excretion of ascorbic acid was estimated every second day. In none of the cases receiving redoxon or the large test doses of ascorbic acid

so soon after the occurrence of the haemorrhage were any disagreeable symptoms produced. These three cases will be described in some detail, since clinical as well as chemical evidence of vitamin C subnutrition was present.

CASE I

A female aged 59 with a history of rheumatic fever at 16. She had never had any dyspeptic symptoms until two weeks before admission, when she started to have nausea and vomiting in the morning. On the day of admission this was preceded by faintness, dizziness, and cold sweat. She vomited about two tumblerfuls of coffee-ground material, and this was followed shortly afterwards by the passing of tar-coloured stools. On admission she complained of a little pressure in the epigastrium; there was no nausea, and no further vomiting occurred. The day after admission the patient appeared pale, but was warm and comfortable and did not sweat. Pupils were round and equal, and reacted to light and accommodation. Ophthalmoscopic examination did not reveal any haemorrhages in the optic fundi. There was no abnormality of the mouth and fauces beyond the pallor of the mucosa, and no peripheral glandular or thyroid enlargement. Examination of the heart and respiratory system revealed nothing abnormal. The abdomen was soft and the liver and spleen not enlarged; no abdominal tenderness was present. There was no oedema in the extremities. Spread over the trunk and the lower extremities were numerous skin haemorrhages 1 to 2 cm. in diameter. The patient stated that she had bruised very easily during the past ten years, and that in the last two years she had often had bleeding from the nose. There was no history of vaginal bleeding or of bleeding from the gums. Pinching the skin produced considerable bruising. Occult blood was found in the faeces, using Gregerson's benzidine test. The bleeding time (Duke) was longer than fifteen minutes; the icteric index (Meulengracht), <5; haemoglobin (Hb 100 per cent. = 18.5 c.cm. O_2), 54 per cent. The red blood cells numbered 3,205,000 per c.mm.; the leucocytes 5,500 per c.mm.; and the blood platelets (Thomsen-Gram), 200,000 per c.mm. The blood urea was 42 mg. per 100 c.cm.; and the sedimentation rate 1 hour 30 minutes.

Graph showing the Daily Urinary Excretion of Ascorbic Acid during the Period in which Redoxon Tablets containing 200 mg. of Ascorbic Acid were given.



On the seventh day the bleeding time (Duke) was 5½ minutes. There was slight nose-bleeding. On the twelfth day the bleeding time (Duke) was 4½ minutes. No further bleedings occurred. The capillary resistance (Göthlin)* was 50. Treatment with two redoxon tablets twice daily was started. On the eighteenth day the icteric index (Meulengracht) was <5; the haemoglobin 71 per cent., the red cells 3,495,000, the leucocytes 5,500, and the blood platelets 183,000 per c.mm.

There was no history of any "bleeders" in the family. The patient lived alone, and stated that her diet had included very little meat and vegetables of any sort. She very rarely ate any fresh fruit. She also said that her diet had been quantitatively restricted during the past two months. The daily excretion of ascorbic acid in the urine before and during the period in which she received 200 mg. ascorbic acid daily by mouth is shown on the graph. Only after eleven days of this regime, in which 2,200 mg. of ascorbic acid was added to the diet, did any considerable increase in the urinary excretion occur.

Radiological examination of the stomach and duodenum revealed no abnormality.

Although the clinical picture presented by this patient was not typical of scurvy, the absence of any family tendency to bleeding, the normal blood platelet counts, and the dietetic history with the complete retention of 2,200 mg. of ascorbic acid lead me to suggest that the presence of this nutritional defect contributed in some measure to the haemorrhagic tendency and the bleeding into the gastro-intestinal tract.

CASE II

A male aged 37 with a history of slight pressure in the epigastrium of twelve years' duration. This occurred one hour after meals, and was relieved by food. There had been remissions lasting two to three years, but no previous vomiting or history of black stools. On the evening of admission he vomited approximately one litre of fluid which was strongly blood-stained and contained blood clots. Examination revealed a thin, pale, poorly nourished man. The teeth were discoloured and carious, the gum margins retracted and congested. He stated that he often had bleeding from the gums on brushing his teeth, and this occurred once during his stay in hospital. No other relevant findings were noted.

Radiological examination of the stomach and duodenum revealed the following: the stomach was elongated and there was pronounced peristalsis. No niche, spasm, or filling defect was found. The duodenal bulb was unusually large, and some spasm at the apex of the bulb was noted.

Routine treatment with purée diet and ferrosi tartras was instituted. Redoxon was given on the ninth day after the haemorrhage. The excretion figures are plotted in the accompanying graph. It will be noted that 1,600 mg. of ascorbic acid (200 mg. for eight days) was given before any increase in the urinary excretion occurred.

CASE III

A male aged 63 years with a previous history of gastro-enterostomy in 1923 and cerebral thrombosis in 1935. He was admitted to hospital on two occasions in 1935 suffering from severe melaena. Since last discharged the patient had been free from dyspeptic symptoms. He ate a full diet and his weight had increased. On the afternoon of the day of admission he had a small haematemesis, and some hours later vomited about one litre of bright red blood. After admission to hospital the patient vomited blood amounting to about half a litre on three occasions. Morphine was given. During the night he vomited coffee-ground material six times—quantity not known: the patient was very collapsed and anaemic, and there was marked tenderness over the abdominal scar. The day after admission he was given a blood transfusion of 500 c.cm., and the purée diet with ferrosi tartras was begun. He vomited on the second and the third day; no blood was present.

On the second day the blood urea was 88 mg. per 100 c.cm. On the third day the capillary resistance (Göthlin) was 50, and he started taking redoxon tablets on the fourth day. On the tenth day the haemoglobin (Hb 100 per cent. = 18.5 c.cm O_2) was 71 per cent., and the red cells 3,625,000 per c.mm. Pyorrhoea alveolaris was present, but there was no history of bleeding from the gums. The urinary excretion of ascorbic acid is given in the graph. Only after the administration of

* Göthlin considers the occurrence of five to eight petechial haemorrhages, when the pressure in the cuff constricting the arm is maintained at 50 mm. Hg for fifteen minutes, as suggestive of diminished capillary resistance.

2,200 mg. of ascorbic acid did any marked increase in the urinary excretion occur.

Radiological examination of the stomach and duodenum was performed with the patient supine. A small hernia hiatus oesophageus was seen. The gastro-enterostomy was revealed; the anastomosis was patent. No niche, spasm, or filling defect was visible.

Discussion

The results obtained in this investigation demonstrate that in a large proportion of the cases tested a severe haemorrhage from a peptic ulcer was associated with a marked degree of vitamin C subnutrition. That this state was responsible for or favoured the occurrence of the haemorrhage cannot be ascertained from the present evidence. However, the four control estimations carried out on three subjects receiving uncontrolled diets yielded results which indicated that these diets were adequate as to their vitamin C content.

Archer and Graham have shown that the subscurvy state occurs in patients suffering from uncomplicated peptic ulcer. Davidson (1928), Platt (1936), and Wood (1935) recorded the existence of actual clinical scurvy in dyspepsia and peptic ulcer patients who had been taking the usual ulcer diet. Haematemesis and melaena did not occur in these cases. In order to obtain material strictly comparable, the state of vitamin C nutrition of three cases of peptic ulcer was studied at the same time and by the same method as was used with the cases of haematemesis here investigated. The results are tabulated in Table II.

TABLE II.—*Results of the Examination of Three Cases of Peptic Ulcer*

Case	Duration of Symptoms	Pre-liminary Period	Intake of Ascorbic Acid Daily			
			700 mg.	1,000 mg.	1,000 mg.	700 mg.
			Excretion of Ascorbic Acid in Urine in 24 Hours			
1	2 years	8.1 mg.	N.E.	9.0 mg.	288.0 mg.	41%*
2	10 „	2.2 „	3.1 mg.	10.3 „	53.8 „	24%
3	8 „	7.2 „	8.5 „	10.0 „	38.0 „	13%

* Expressed as a percentage of the amount ingested. N.E.=Not estimated.

It is seen that in this series a marked degree of vitamin C subnutrition was present. The question arose whether the haemorrhage itself was responsible for the nutritional state noted in the cases of haematemesis. This possibility cannot be excluded altogether, but the frequent occurrence of a subscurvy state in cases of peptic ulcer not complicated by haemorrhage renders it improbable. Other factors which may have been responsible for the low excretion and storage of ascorbic acid in the cases of haematemesis will be briefly considered.

Schroeder (1935) and Harde and his co-workers (1935) showed that the occurrence of fever has a marked effect in reducing the urinary excretion of ascorbic acid, and also its storage in the body tissues. Five of the cases here reported had low fever up to 38° C. shortly before or during the preliminary period of the investigation and are indicated in Table I. It will be seen that the excretory responses of these cases are not significantly inferior.

Lund and Lieck (1936) have shown that the oxygen tension and *p*H of the urine in the urinary tract influence the oxidation of the ascorbic acid present in the urine. Hawley and his co-workers (1936) observed that the administration of large doses of alkali, by increasing the *p*H of the urine, reduces the amount of ascorbic acid estimable in the urine when voided. Six of the fifteen cases here reported received considerable doses of alkali. It was not possible to estimate the *p*H of the urine in these cases, but certain losses in estimable ascorbic acid content must undoubtedly have occurred in this manner. The cases which received alkali are indicated in the table: comparison with those not receiving alkali leads me to conclude that this factor does not obscure the general significance of the results.

Three cases did not receive alkali and had a normal temperature during the course of their illness. It would thus appear that the subscurvy state found in these cases of peptic ulcer complicated by haemorrhage was in the main due to the insufficiency of vitamin C in their diet before and immediately following the haemorrhage.

With regard to the significance of the findings there is some evidence that certain experimental animals (guinea-pigs, monkeys, and pigeons) kept in the subscurvy state tend to develop haemorrhagic infiltration of the bowel wall, and in some cases actual ulcers have been noted in the stomach and duodenum. McCarrison recorded these facts in 1921, and Smith and McConkey in 1933 also found that guinea-pigs kept in the subscurvy state tended to develop peptic ulcers. It must be emphasized that the lesions noted by these workers were present in the majority of cases before clinical evidences of scurvy were apparent. There is no direct evidence, experimental or clinical, that the existence of the subscurvy state in human subjects produces or favours the onset of peptic ulcer. However, the fact that in human subjects suffering from actual clinical scurvy the healing of wounds is very poor, and that in general the fibrous tissue responses of the organism are also very poor, may be of significance.

Examination of patients admitted to hospitals shows that a considerable proportion of them are in a subscurvy state. Harris, Abbasy, Yudkin, and Kelly (1936) found that 84 per cent. of seventy-four patients admitted to the Cambridge Hospital excreted less than the 13 mg. of ascorbic acid which they regarded as the minimum. Using the capillary resistance as an indication of the state of vitamin C nutrition, Schultzer (1934) found that twenty-five out of 145 patients admitted to the Kommunehospital, Copenhagen, during winter months showed evidence of subnutrition in this respect. In both these groups of patients the proportion of cases with gastric symptoms among those regarded as unsatisfactory was large. The high general incidence of subscurvy in these hospital patients was such that no special significance can be attached to this association when considering the aetiology of the gastric symptoms.

The evidence as yet available is, however, sufficient to suggest that the presence of a state of subscurvy in patients with peptic ulcer may influence the course of the disease unfavourably. Further, clinical observation has demonstrated the importance of maintaining the general condition and nutrition in cases of peptic ulcer.

The fact that a very high proportion of patients suffering from peptic ulcer, with or without the complication of haemorrhage, are much below what has been found to be the minimum standard of vitamin C nutrition is thus a clear indication that attention should be paid to this aspect of their nutrition. The importance, and the possibility, of rapidly restoring the general nutrition in patients with haematemesis were shown by Meulengracht (1935 and 1936). In a series of 273 patients with haemorrhage from a peptic ulcer who were given an adequate purée diet from the first day of admission the mortality was only 1 per cent. Schiödt (1936 and 1937) showed that the

restoration of blood loss is more rapid in cases of haematemesis treated by the Meulengracht method. The effect of the more rapid restoration of the vitamin C nutrition in the present series of cases cannot as yet be estimated. Whether peptic ulcers heal more soundly, whether haemorrhages recur less frequently, and whether the blood regeneration is still more rapid in patients whose vitamin C nutrition as well as their general nutrition is maintained at what is regarded as physiological level are questions that have still to be answered.

It appears from the results of this investigation that the purée diet given to these cases of haematemesis during the winter months did not contain enough vitamin-C-rich foods to restore rapidly their vitamin C deficiency. The addition of preparations or foods rich in vitamin C is thus necessary. Harris (1928) recommended such additions to the diet of patients with peptic ulcer, and Witts (1937) has recently added adequate amounts of orange juice, marmite, and cod-liver oil to the purée diet given in cases of haematemesis and melaena. As regards the amount of ascorbic acid usually required by patients with haematemesis to replenish the vitamin C stores of their tissues, 200 mg. daily by mouth will as a rule accomplish this in ten to fifteen days. After this a maintenance dose equivalent to 30 to 60 mg. is advisable. This could be achieved very satisfactorily by giving 60 to 100 c.cm. of orange juice, or smaller amounts of tomato juice, together with additions of fresh milk, vegetables, and potatoes.

Summary

1. The state of vitamin C nutrition of fifteen cases of haematemesis and melaena was investigated by the estimation of the excretion of ascorbic acid in the urine.

2. Thirteen of the fifteen cases were found to be in a condition of vitamin C subnutrition or "subclinical scurvy." This was of a severe degree in seven of the cases.

3. Three cases of peptic ulcer uncomplicated by haemorrhage were similarly found to be in a state of vitamin C subnutrition.

4. Estimations carried out on three healthy control subjects did not reveal any vitamin C subnutrition.

5. The addition of 200 mg. of synthetic ascorbic acid to the purée diet given to the cases of haematemesis led to the correction of the nutritional defect in ten to fifteen days, and produced no untoward symptoms even when started four days after the actual bleeding.

6. Ascorbic acid, 200 mg. daily by mouth for ten to fifteen days, is recommended to be followed by the liberal addition of orange juice (60 to 100 c.cm.) to the diet of these patients.

7. The general indications for correcting this nutritional defect are discussed.

It is a pleasure to record my indebtedness and gratitude to Professor E. Meulengracht for hospitality and direction. My thanks are also due to Dr. Knud Secher for permission to investigate cases under his care, and to Roche Products Ltd. for a generous supply of redoxon and ascorbic acid.

References

Abbasy, M. A., Harris, L. J., Ray, S. N., and Marrack, J. R. (1935). *Lancet*, **2**, 1399.
Archer, H. E., and Graham, G. (1936). Ibid., **2**, 364.
Davidson, P. P. (1928). *J. Amer. med. Ass.*, **90**, 1014.
De la Viesca, P. (1935). *Arch. Verdauungsk.*, **58**, 22.
Göthlin, G. F. (1931). *Scand. Arch. Physiol.*, **61**, 225.
—— (1934). *Nature*, **134**, 569.
Harde, E., Rothstein, I. A., and Ratish, H. D. (1935). *Proc. Soc. exp. Biol.*, N.Y., **32**, 1088.
Harris, L. J., Ray, S. N., and Ward, A. (1933). *Biochem. J.*, **27**, 2011.
—— Abbasy, M. A., Yudkin, J., and Kelly, S. (1936). *Lancet*, **1**, 1488.
Harris, S. (1928). *J. Amer. med. Ass.*, **91**, 1452.
Hawley, E. E., Frazer, J. P., Button, L. L., and Stephens, D. J. (1936). *J. Nutrit.*, **12**, 215.
Hurst, A. F., and Ryle, J. A. (1937). *Lancet*, **1**, 1.
Johnson, S. W., and Zilva, S. S. (1934). *Biochem. J.*, **28**, 1393.
Kelly, S. (See Harris, L. J., Abbasy, M. A., Yudkin, J., and Kelly, S.)
Lund, H., and Lieck, H. (1936). *Scand. Arch. Physiol.*, **74**, 255.
McCarrison, R. (1921). *Studies in Deficiency Diseases*, pp. 95 and 225, London.
Meulengracht, E. (1935). *Lancet*, **2**, 1220.
—— (1936). *Wien. klin. Wschr.*, **49**, 1481.
Platt, R. (1936). *Lancet*, **2**, 366.
Schiödt, E. (1936). *Amer. J. med. Sci.*, **192**, 163.
—— (1937). Ibid., **193**, 313.
Schroeder, H. (1935). *Klin. Wschr.*, **14**, 484.
Schultzer, P. (1934). *Acta med. scand.*, **81**, 113.
Smith, D. T., and McConkey, M. (1933). *Arch. intern. Med.*, **51**, 413.
Witts, L. J. (1937). *British Medical Journal*, **1**, 847.
Wood, P. (1935). *Lancet*, **2**, 1405.

SQUINT AND HETEROPHORIA

WITH SPECIAL REFERENCE TO ORTHOPTIC TREATMENT*

BY

W. H. McMULLEN, F.R.C.S.

Consulting Ophthalmic Surgeon, Charing Cross Hospital

The rational treatment of any disorder must be based upon the study of its aetiology, of its pathology, and of its clinical features and course. The aetiology of concomitant strabismus is a problem as yet unsolved. We have hypotheses in plenty, but none that gives a completely satisfactory explanation of the development of squint. Pathological changes are absent, except perhaps occasional hypertrophy and shortening of one muscle with thinning and lengthening of its opponent. It is only in the study of the clinical features and course of the disorder that we obtain indications for treatment based on exact observation. The treatment of squint has, however, been largely influenced by the theories held as to its aetiology, so it seems well to begin with a short critical review of these theories.

In ancient times very fantastic ideas prevailed as to the cause of squint, and it is a curious fact that one of the first writers to propound anything like modern views on the subect was the notorious charlatan, the Chevalier Taylor, who flourished in the eighteenth century (1702–72). He said that squint was nothing but a misdirection of the eyes on looking at objects; that if such misdirection were produced artificially by pressing on the eye diplopia resulted, because the image fell on an abnormal area of the retina; that diplopia did not occur in squint because many squinters saw better with one eye than with the other, or if they saw equally well with both they used one eye more than the other, and therefore directed its axis on the object. He explained that an image was indeed formed in the squinting eye, but it was so weak that it did not hinder clear vision with the other, and that with practice one learned to disregard a second image. Elsewhere he made more questionable statements, as that a child squinted owing to association with squinting persons, or from too many objects being brought to his notice at the same time, which caused him to look simultaneously in different directions.

The theories most generally held in recent times are: (1) The muscular theory; (2) the accommodation theory; and (3) the theory of defective fusion faculty. In addition to these one has to consider the influence of anisometropia, of heredity, of nervous factors, and of social conditions.

* Read in opening a discussion in the Section of Ophthalmology at the Annual Meeting of the British Medical Association, Belfast, 1937.

The Muscular Theory

Until the publication of Donders's theory in 1866 a muscular defect was generally held to be the essential cause of squint. Many have continued to support this theory, but varying views have been held as to the exact nature of the defect—for example, congenital or acquired paresis, a developmental anomaly in the muscles, innate imbalance, or imperfect nerve control. In favour of the theory it is noted that slight anatomical abnormalities are sometimes found at operation, especially undue thickness of the internal rectus and thinness of the external; but some consider that such abnormalities are always secondary, due to long-standing deviation. The hypothesis receives some support from the observation that cases which at first appear to be obvious examples of congenital palsies may develop in time into concomitant squints. Further support has been received from the recognition by modern methods of examination that there is a slight degree of incomitance in a considerable proportion of apparently concomitant squints. Gayer Morgan found this in 20 per cent. of a series of cases. The frequent onset of squint after acute illness, such as measles or whooping-cough, has been held to support the muscular hypothesis. It is suggested that slight degrees of toxic paralysis may be caused by these diseases, comparable to post-diphtheritic paralysis. I am not aware, however, that paralyses are known to occur in other parts of the body after the common acute fevers, other than diphtheria.

There are weighty arguments against the theory that a congenital muscular or neuro-muscular defect is the essential cause. In the great majority of cases no defect of mobility of the squinting eye can be detected. It is true, as already mentioned, that a considerable minority of cases at first sight appearing concomitant are found to be slightly incomitant, and that precise measurements of the eye movements in young children are impossible; but if a squint is concomitant over a full range of movements, as tested by a modern orthoptic instrument, it seems most improbable that paresis is the cause of the squint. It is difficult, on the hypothesis of congenital muscular defect, to account for the common age of onset. It is said that most infants do not acquire full co-ordination of eye movements for several months after birth, but it is generally agreed that good co-ordination is normally developed by the time a child is a year old, so one would expect the effects of congenital anomalies to become manifest by that time. Yet the common age of onset is later.

Another objection to the purely muscular theory is that an obvious congenital or very early acquired paralysis may be present without leading to constant strabismus. For instance, in some cases of congenital paresis of abduction the eyes are ordinarily straight, though the head may be held turned slightly to one side. Still more striking are the typical cases of ocular torticollis.

It is probable, therefore, that while the presence of a slight muscular weakness or imbalance may often be a factor in the aetiology of squint it is not alone sufficient to cause it.

The Accommodation Theory

The theory of Donders is so familiar that it is unnecessary to describe it. It was the first to offer a rational explanation of the occurrence of strabismus in the absence of recognizable muscular anomaly; but while no one now doubts that errors of refraction may play an important part in strabismus, few, if any, consider that this theory affords a full explanation of its development.

The most convincing evidence in its favour is that some cases are completely cured by correction of errors of refraction without any other treatment. In many others the angle of squint is reduced. Strong support was given to the hypothesis in a paper published by Chavasse in 1930. In a comparative study of 200 normal children and 200 squinters he found a very striking correlation between the degree of hypermetropia and the liability to squint. The age of onset is explained on the accommodation theory by the assumption that in infancy and early childhood little effort is made to focus near objects clearly, and that squint develops at the time when a child begins to take an interest in pictures, etc., close at hand, and so makes greater demands upon his accommodation.

The objections to the theory are many. Most hypermetropes, even of high degree, do not squint. In myopes convergent squint is commoner than divergent: E. Thomson found among squinting myopes thirty-eight convergent to twenty-seven divergent, a ratio of 1.4 to 1.0. In hypermetropic squinters the convergence is usually greater than that normally associated with the accommodation required to overcome the error of refraction.

The difficulty of accounting for the excess of convergence in relation to accommodation has been met by the suggestion that at the onset of squint a child gets diplopia, and that with the comparatively slight convergence attributable to excessive accommodation the images are but slightly separated, and suppression of one image is difficult. Further convergence occurs to separate the images more widely, and so facilitate suppression and overcome diplopia. There is no doubt that disproportion between accommodation and convergence is easier in the direction of excess of convergence than in that of deficiency; it is easier to converge without accommodating than to accommodate without converging; so it is reasonable to suppose that a child may overcome diplopia more easily by excessive convergence than by relative divergence, although the latter would enable him to maintain binocular vision. It is probable that in some individuals there is innate disproportion between convergence and accommodation. Certainly some children, even when their errors are fully corrected, squint much more when looking at near objects.

The Fusion Theory

One of the most important events in the history of our subject was the publication in 1903 of Worth's book on squint, in which he expounded the theory that the essential cause of squint was a defect in the fusion faculty. This hypothesis has been widely accepted, and has played an important part in stimulating the study of orthoptic methods of treatment. Nevertheless it remains unproved. It is certain that the faculty of binocular vision is defective in most squinters; but this defect may well be a result and not the cause of the squint. It has been found in orthoptic clinics that when good binocular vision has been developed by training it may be rapidly lost, in cases with much persisting heterophoria, if exercises are stopped too soon. It seems reasonable to suppose that in very early life binocular vision may be even more easily lost. Worth himself admitted that hypermetropia might sometimes cause a squint in early infancy, before the fusion faculty had developed, and that if the squint were allowed to persist the development of the faculty might be prevented. On the other hand, one occasionally sees cases of squint in which the fusion faculty is quite good. Worth's original assumption of the existence of a fusion centre in the brain, for which there was no anatomical or clinical evidence, is no longer regarded as essential to the theory.

Anisometropia and Squint

Supporters of all the main theories as to the essential cause of squint agree that inequality of vision in the two eyes favours its development. It is not easy to assess the importance of this factor. Anisometropia is common in squinters, but most persons with anisometropia do not squint, even when the visual acuity in the worse eye is much below normal. Many years ago, when investigating a series of cases of anisometropia, I was surprised to find what good binocular vision was possessed by some individuals with very unequal eyes. I found in one case excellent stereoscopic vision with a difference of nearly 6.5 D between the two eyes. Another had good stereoscopic vision with a difference of 4.25 D, although in the worse eye vision without glasses was less than 6/60 and with correction was only 6/18: he had never worn glasses, vision in the better eye being 6/6.

Heredity in Squint

The influence of heredity has been variously estimated. Mackenzie noted its importance. Worth obtained a history of squint in parent, grandparent, brother, or sister in 51 per cent. of 1,373 cases. The question of heredity is closely linked with that of nervous or psychological factors. Cosse, including certain unstable mental characteristics, traced inheritance in as many as 74 per cent. of his cases.

Nervous Factors in Squint

The onset of squint is very often attributed to a fright, a fall, or some other nervous shock. Inman, especially, has emphasized the importance of psychological factors. It is significant that one is often told that the squint is worse when the child is with strangers and feeling shy, or when overexcited or tired. Lyle and Jackson, in their recently published book on practical orthoptics, quote cases illustrating the importance of psychological factors. In this connexion it is interesting to note that Cantonnet and Filliozat lay great stress upon the conscious mental effort required of the patient for successful training, on the patient's will to be cured, and upon the encouragement given by relatives and friends. Personally I think we should not ignore the possibility that in some cases at least squint may be a functional nervous disorder comparable to a hysterical pose, and that the advice of a competent psychiatrist may be helpful in treatment.

Influence of Environment

I think that most ophthalmic surgeons find that squint is commoner among children attending school clinics and hospitals than among private patients. The most striking demonstration of the relation between social conditions and prevalence of squint was given by Ernest Thomson in a study of the incidence among 32,000 children attending schools classified according to the social status of the parents. The proportion of squinters was found to increase from 1.9 per cent. in the best class to 3.5 per cent. in the poorest.

Amblyopia and Squint

The amblyopia associated with squint presents a difficult problem. It is common ground that congenital amblyopia must favour the development of squint by hindering good binocular vision. But opinions differ greatly as to the frequency of congenital amblyopia. In the past many believed that the amblyopia of a squinting eye was always due to some developmental defect or to some lesion in very early life, such as macular haemorrhage at birth, which disappeared leaving no trace, and that there was no such thing as amblyopia ex anopsia. The very common presence of retinal haemorrhages in the newly born was shown by the investigations of F. Juler published in 1926. Observations confirming and extending those of Juler were communicated to the Ophthalmological Section of the Royal Society of Medicine last November by Dr. Frances Richman of Brooklyn, N.Y. She hopes to be able to follow up many of her cases to determine whether there is any relation between such haemorrhages and squint or amblyopia. Juler has been able to follow up only five of his cases. In none of these did he find either squint or amblyopia.

The possibility of amblyopia ex anopsia is now generally accepted, although opinions differ still as to its frequency relatively to the congenital form. The great supporter in Great Britain of the theory of amblyopia ex anopsia was, of course, Claude Worth. He believed that very few cases of amblyopia in squint were congenital, and accepted as such only those in which there was scarcely a possibility of acquired amblyopia. I find it difficult to accept without question Worth's criteria for the discrimination of congenital and acquired amblyopia, but his careful analyses of a large number of cases prove very conclusively some facts of great practical importance. He showed that the intensity of the amblyopia and the difficulty of curing it increased in direct proportion to the fraction of the child's life during which it had squinted before treatment was commenced, also that the earlier the age at which constant unilateral squint developed the more rapidly and the more seriously did the vision of the squinting eye deteriorate. He found that amblyopia ex anopsia seldom occurred to any great degree when squint commenced after 6 years of age. A valuable study by F. Juler of the vision after operation in cases of unilateral traumatic cataract supports Worth's views. Juler found that none of the eyes which became cataractous before 5 years of age retained a final central acuity of 6/60, while of those developing cataract after 6 years of age the great majority had 6/12 partly or better. The development of amblyopia ex anopsia is one of the few things connected with squint that have been proved by experiment, albeit accidentally. Worth observed development of amblyopia in cases in which treatment was neglected, and others have found that unduly prolonged occlusion may cause amblyopia in an originally fixing eye.

I think there is now fairly general agreement that in most cases amblyopia can be prevented or cured if treatment is undertaken early enough and efficiently carried out. Probably we should see little amblyopia in squint if every child were brought under competent treatment within a few weeks of the first appearance of squint.

In this very brief and inadequate review of the problem of the aetiology of squint I have considered many factors that may be to a greater or less extent responsible. My conclusion is that we cannot say that any one of them is the essential cause of the disorder. It may be that there is some one underlying cause in all cases, but I think it more probable that squint is a clinical condition due to many causes, differing in character and importance in different cases. Probably at the present time progress in treatment will be furthered rather by the more exact study of the clinical features and course of the disorder than by the elaboration of theories as to its aetiology.

Development of Orthoptic Treatment

The most notable development in the treatment of squint during the past decade has been the elaboration of methods of orthoptic treatment. The idea of remedying squint by exercises is no new thing. Roux, in 1814, described the cure of his own external squint by exercises, but it is said that the cure was not complete: Mackenzie in 1841 referred to the use of Wheatstone's stereoscope. But Javal is usually, and I think rightly, regarded as the true pioneer of orthoptic training. Javal, who used a stereoscope chiefly, was followed in France by Rémy, inventor of the diploscope, and many others. In Great Britain the names of Maddox and Worth stand pre-eminent in this connexion.

The development of orthoptic treatment in France and Great Britain has been largely influenced by the general adoption in the two countries of two different instruments—in France the diploscope of Rémy, in Great Britain the amblyoscope of Worth. Exercises with the diploscope call for a relatively high degree of intelligence and power of concentration on the part of the patient. Hence we find that French writers generally advise commencement of training at a later age than British. Cantonnet and Filliozat consider that it is seldom of any use to begin training before the age of 7. They say that better results are obtained in a girl of 17 than in a child of 6 or 7, because her will is stronger and her intelligence more developed, and that there is fair hope of success from training up to the age of 30 to 35 years. In the system of training described by these writers mental concentration and effort of imagination play a very important part. Worth, on the other hand, claimed that it was quite easy to use the amblyoscope at 3 to 3½ years of age, that fusion training of children under 5 or 6 years of age was in suitable cases easily accomplished, and that after the age of 7 the results were seldom worth the time and trouble that they cost. Experience in the orthoptic clinic at the Royal Westminster Ophthalmic Hospital has led Lyle and Jackson to the conclusion that probably 6 years is the ideal age at which to commence treatment by exercises, but that good results are obtainable in some cases up to early adult life.

There is no doubt that much depends upon the character and intelligence of the patient and upon the skill and personality of the trainer. Many, including myself, who attempted treatment on the lines advocated by Worth failed to obtain satisfactory results and became sceptical as to its value. A few, however, maintained faith in it. In the year 1914, on the suggestion of William Ettles, a much improved form of amblyoscope was designed by Mr. J. R. Howard, now a member of the firm of Messrs. Curry and Paxton. This instrument was named the synoptiscope. It was the prototype of all the improved amblyoscopes now used for training under the names of synoptiscope (the original instrument with improvements), synoptophore, and orthoptoscope. Only one synoptiscope was constructed until after the war, when Mr. Howard brought out an improved model, which he showed to me soon after its introduction. At that time I had little belief in the value of orthoptic treatment and, I regret to say, took little interest in the instrument. Maddox was one of those who had continued to use the amblyoscope, and was one of the first to employ the synoptiscope. Maddox was very largely responsible for the recent development of orthoptic treatment. He taught his daughter the methods he employed, especially the use of his cheiroscope and of the synoptiscope. Early in 1929 Miss Maddox came to London and started a private clinic. In 1930, on the suggestion of the medical staff, the board of management of the Royal Westminster Ophthalmic Hospital invited Miss Maddox to start an orthoptic clinic at the hospital. She accepted the invitation, and under her guidance, with the close co-operation of the medical staff, the clinic soon gained wide recognition as a centre for orthoptic treatment and as a school of instruction in methods of training. Other clinics and training schools were soon started, and it became obvious that something should be done to ensure that persons undertaking orthoptic training were properly qualified for the task. An Orthoptic Board was therefore established, consisting of representatives from hospitals with orthoptic clinics. This board has prescribed certain educational standards for entrants to orthoptic training schools and prepared a syllabus for the course of instruction extending over a minimum period of a year. At the end of that period students are examined and successful candidates are granted certificates, which may be accepted as evidence that the holders have been adequately trained and have satisfied competent examiners that they are fitted to undertake training. Candidates are required to give an undertaking to work only in collaboration with qualified medical practitioners.

BIBLIOGRAPHY

Cantonnet, A., Filliozat, J., and Fombeure, G. (1934). *Strabismus*, London.
Chavasse, B. (1930). *Trans. Ophthal. Soc. U.K.*, **50**, 168.
Inman, W. (1921). Ibid., **41**, 181.
Juler, F. (1921). Ibid., **41**, 129.
—— (1926). Ibid., **46**, 42.
—— (1937). *Proc. roy. Soc. Med.*, **30**, 279.
Lyle, K., and Jackson, S. (1937). *Practical Orthoptics in the Treatment of Squint*, London.
Mackenzie, W. (1840). *Diseases of the Eye*, third edition, p. 283, London.
—— (1841). Ibid. (Appendix), p. 27.
McMullen, W. H. (1912). *Ophthal. Rev.*, **31**, 353.
Morgan, O. Gayer. Personal communication.
Richman, Frances (1937). *Proc. roy. Soc. Med.*, **30**, 277.
Taylor, the Chevalier, cited by Coats, G. (1915). *Roy. Lond. Ophthal. Hosp. Rep.*, **20**, 1.
Thomson, Ernest (1924). *Trans. Ophthal. Soc. U.K.*, **44**, 240.
—— (1924a). Ibid., **44**, 250.
Worth, C. (1903). *Squint*, London.

W. Heim (*Dtsch. med. Wschr.*, August 27, 1937, p. 1321) gives an account of the 283 cases operated on for perforated gastric or duodenal ulcer at a hospital in Berlin in the period 1920 to 1936. About five-sixths of all the patients had suffered from gastric symptoms for more than six months before perforation. The stomach was the seat of the ulceration in 213 cases, and the distribution of the cases over the years under review was fairly even. But during this period there was a notable rise in the number of cases of duodenal ulcer. Only twenty-one of the 283 patients were women, and the immediate mortality was 36.7 per cent. (107 deaths). The mortality showed no sex inequality, but it rose after 45 and was as high as 71 per cent. of the cases operated on more than sixteen hours after perforation. Eighty-one patients were re-examined after discharge, and forty-five were found to be symptom-free. Seven had required another operation, and thirty could follow their occupations only when they dieted strictly. The patients rendered symptom-free were for the most part elderly, whereas post-operative disturbances were comparatively common among the patients under 30. The shorter the duration of symptoms before perforation, the higher was the proportion of complete cures after operation. One of the lessons emerging from this follow-up study was that the success of any operation for perforated gastric or duodenal ulcer largely depended on the conscientiousness with which after-treatment was carried out, whether dietetic or medicinal.

TREATMENT OF CONCOMITANT SQUINT BY ORTHOPTIC METHODS*

SOME GENERAL CONSIDERATIONS

BY

G. G. PENMAN, M.D., F.R.C.S.

Ophthalmic Surgeon to Out-patients, St. Thomas's Hospital; Surgeon, Royal Westminster Ophthalmic Hospital

In this paper I propose to deal with some general considerations in the use of orthoptic treatment in concomitant squint. Details of treatment and the question of heterophoria are being discussed by other speakers.

Cases Suitable for the Treatment

In the first place we may consider what requirements the patient must fulfil to be acceptable for orthoptic treatment.

1. AGE

It is rare for orthoptic treatment, as apart from occlusion, to be of any practical value before the patient is 4 years old. In most cases little co-operation can be obtained even at this age; occasionally with exceptionally good and intelligent children a start can be made just before the fourth birthday. It is important, however, that the treatment should be begun at the earliest moment practicable.

2. INTELLIGENCE AND PSYCHOLOGICAL STATE

Patients should be of at least average mentality. It is possible to waste a great deal of time with little or no effect on a very dull or stupid child who may be keeping a brighter (and therefore more hopeful) case on the waiting list. As things are at present it is best to treat the child of low mentality entirely from the cosmetic point of view, and proceed on the lines in vogue before routine orthoptic treatment was introduced. Again, in these cases where there is a large psychological element steps must be taken to treat this beforehand.

3. REFRACTION

An accurate retinoscopy must be performed under full atropine cycloplegia, and checked where possible by a subjective test while the patient is still under the influence of the mydriatic. The correction thus obtained should be ordered with a deduction of 0.5 sph. In some cases, especially in accommodative squints, the full correction may be given. The glasses should be obtained and the child allowed to get thoroughly used to them before orthoptic treatment is commenced.

4. VISION

As a general rule no case should be accepted for treatment with corrected vision of less than 6/18 in the worse eye. If the vision is lower it must be brought up to this standard by occluding the better eye. That is not to say, of course, that occlusion is not to be undertaken until the vision can be determined by subjective tests. Much information can be obtained by observing the readiness and steadiness with which the squinting eye fixes when the straight one is covered, and all cases which are not obvious alternaters should have the straight eye occluded as soon as the squint is noticed. It must be remembered that the visual acuity in the occluded eye may fall if a careful watch is not kept; also that when full vision has been obtained it may be lost again in a young child if occlusion is entirely abandoned. Sattler (quoted by Travers) describes a series of eighty-nine patients whose vision was markedly improved by occlusion. The time in those under 2 years was one to six weeks; in those of 4, one to three months; and in those over 8, one to three years.

From 1928 to 1930 I made notes of a series of a hundred cases of concomitant squint in very young children, none being over 7, and the majority too young to read. These were all occluded, and I endeavoured to follow them up during the next few years. Unfortunately many of them lost touch by leaving London, by being taken over by school clinics, or by their parents not troubling to bring them regularly, especially when the squint was straight with glasses. Of the forty-two whom I was able to see when a really reliable visual test was possible:

35 had 6/9 or better in both eyes
2 „ 6/9 partly in the squinting eye, 6/6 in the other
1 „ 6/12 in the squinting eye, 6/6 in the other
1 „ 6/18 „ „ „ „ 6/6 „ „ „
1 „ 6/24 „ „ „ „ 6/6 „ „ „
2 „ 6/60 „ „ „ „ 6/6 „ „ „

Thus all but three were in a fit visual condition to receive orthoptic treatment.

The three failures were:

A (6/24).—This child had a great deal of illness during the period of observation, and when ill did not have the good eye covered. I am doubtful whether occlusion was strictly maintained at home even when the child was well.

B (6/60).—In this case the squint had been constant since the age of 1, but I did not see it till three years later. I think better vision would have been obtained if the case had been taken in hand earlier.

C (6/60).—"Very poor fixation in the squinting eye" is here noted at the first attendance, and in spite of rigid occlusion 6/60 was the best result that could be obtained. This was very likely a case of true congenital amblyopia.

It is interesting to compare with this the following series of 143 cases occluded totally for three months as a preliminary to receiving treatment in the squint department at the Royal Westminster Ophthalmic Hospital (Table I).

TABLE I.—*Showing Results in a Series of 143 Cases Treated at the Royal Westminster Ophthalmic Hospital*

Vision before Occlusion	Vision Improved after Occlusion to—					Not Improved	Total Cases
	6/24	6/18	6/12	6/9	6/6		
Less than 6/60 ..	1	1	1	1	1	4	9
6/60	1	2	5	8		3	19
6/36	1	5	16	13	2	3	40
6/24		1	10	17	4	1	33
6/18			10	23	6	3	42
Totals						14	143

The great majority of these patients were over 4 years of age and many over 7.

Thirty of the foregoing cases had equal vision in both eyes. Of the fourteen patients in whom failure occurred several were above the age where occlusion is usually successful; three were respectively 16, 13, and 10, and two were 9. On the other hand, in one case (not in this series) the vision was improved from 6/60 to 6/12 in a patient aged 19. These figures do not include many children, especially those under 4, occluded by less drastic means with satisfactory results. In other words, the proportion of children with concomitant squint and some degree of

* Read in the Section of Ophthalmology at the Annual Meeting of the British Medical Association, Belfast, 1937.

amblyopia whose vision is not improved by occlusion would appear to be much less than 10 per cent.

The methods of occlusion in general use are:

(*a*) *Atropine.*—In cases where the sight of the squinting eye is only slightly defective a drop of atropine instilled daily into the straight eye will blur its sight sufficiently to cause the patient to take up fixation with the other. After a month or six weeks the atropine may be stopped. If, when the atropine wears off, the child fixes equally readily with either eye occlusion may be stopped, though a close watch must be kept on the case. If the originally fixing eye is still preferred another period of atropine should be ordered. And so on. Sometimes the eyes may be atropinized alternately.

(*b*) "*Stripping*," by pasting thin strips of adhesive paper on the spectacle lens of the better eye, is of great value in cases with 6/18 or better, especially while they are undergoing orthoptic treatment. The glass may be completely covered at first, and later on vertical strips may be used, with intervals equal to the width of the strips. This method is of especial value in the accommodative type of squint.

(*c*) The *Chavasse glass* is, except for atropine, the least obvious form of occlusion, and may be used with advantage in some cases where total occlusion is not essential.

(*d*) The *Doyne occluder*, a shield which covers the whole eye and fits under the spectacle lens, is used in many cases where total occlusion is required. But even this is not enough in some cases; some children manage somehow to peep round the edge, and one has to resort to plaster.

(*e*) *Adhesive plaster*, such as elastoplast, fastened over a pad completely covering the eye.—This is the most satisfactory method in the worst degrees of amblyopia, but is difficult to carry out except in the case of small children.

5. RETINAL CORRESPONDENCE

When the patient comes within the foregoing standards the question of "projection" arises. About 50 per cent. of cases of concomitant squint, mainly those of long duration, early onset, and with a fairly big angle, exhibit the phenomenon known as abnormal retinal correspondence, or false projection. In these cases the image received from a non-macular part of the retina of the squinting eye is interpreted as if it came from the macula. If this part of the retina is that receiving images which also fall on the macula of the straight eye the case is said to have an angle of anomaly equal to the angle of squint, and to have harmonious abnormal retinal correspondence. But often the angle of anomaly is less than the angle of squint, and the patient is then said to have unharmonious abnormal retinal correspondence. Travers says of this condition:

"An abnormal retinal correspondence is in all probability the result of a compromise between innate retinal local signature and the judgement of visual direction, and if this be so would explain the great differences between measurements made by different methods. It is essentially a faulty judgement of visual direction."

It is obvious that abnormal retinal correspondence must be eliminated before any further orthoptic methods can be employed. It is a long and trying process, but in favourable cases the angle of anomaly gradually lessens and finally the retinal correspondence becomes normal. Our general rule at the Royal Westminster Ophthalmic Hospital is that twenty-four treatments should be given in these cases. If there is no true projection at the end of this time operation should be performed. Travers considers that all cases of abnormal retinal correspondence should be treated by operation, as they have a tendency to develop normal correspondence if put straight operatively. On the other hand, there is no doubt that the case with normal correspondence and good binocular vision has much more tendency to stay straight after operation.

Five groups of cases will thus have been eliminated and should be dealt with entirely cosmetically (except Group E):

(A) Unsuitable mentality.
(B) Persistent amblyopia.
(C) Persistent abnormal retinal correspondence.
(D) Complete lack of fusion sense.
(E) Marked incomitance or vertical deviation.

In some cases there may be unbalanced action of the oblique muscles, and operation may remedy this and allow orthoptic treatment a better chance. Orthoptic treatment alone may give the following results:

(1) Parallel visual axes with good binocular vision.
(2) Cosmetic success.
(3) Cosmetic failure with good binocular vision. (Cases with 30 degrees or more of squint will always need operation in addition to orthoptic treatment.)
(4) Cosmetic failure with poor binocular vision.

In Groups 3 and 4 operation will be required, and cases in Group 3 will often be converted thus into physiological cures. It is very important that they should have both pre- and post-operative treatment.

Length of Treatment

The average number of attendances by each patient in the squint department at the Royal Westminster Ophthalmic Hospital is forty-eight. In addition to this, after treatment is completed patients attend for observation about once a month for the first three months, then about once in three months for a year or so, according to the condition. Occasionally, if there is any sign of deterioration a further half-dozen or so attendances may be necessary.

Type and Time of Operation

The operation which I usually perform is a "three-snip" tenotomy or else a controlled tenotomy, combined with resection of a portion of the tendon of the opposing muscle. From the operative point of view alone about 12 to 14 is the best age, because: (i) a local anaesthetic can be used, and the eyes can be adjusted until the optic axes are parallel, while the ocular muscles have retained their power of movement and co-ordination, thus ensuring a more accurate adjustment; (ii) as many squints tend to straighten out at this age an operation from the purely cosmetic point of view may be avoided altogether if it is deferred till then.

There are, however, various other factors, as follows:

(*a*) *Psychological.*—Some children are very sensitive about their squint; others do not seem to mind in the least. Small boys who are teased a great deal by their school-fellows are often very unhappy for this reason, and in such cases operation should be performed as soon as possible, even if there is some chance of the eyes becoming straight after prolonged treatment. I regard this as a most important point, and think that in every case careful inquiries should be made (but not from the child) as to how much it worries about the squint. It is often a good plan to perform the operation when the child is being transferred from one school to another.

(*b*) *Circumstantial.*—If the parents have great difficulty in bringing the child to the orthoptic clinic regularly, or are about to go abroad or to some remote part of the country where there is no orthoptic clinic, early operation should be considered.

(*c*) *Degree.*—In very young children under 4 years, with a big angle of squint not improved by glasses, it is obvious that orthoptic treatment alone will be insufficient, and it is well to operate and get the squint straight before orthoptic treatment is started.

(*d*) *Orthoptic.*—Where orthoptic treatment has been given, and (i) has failed owing to persistent false projection or non-concomitance, or (ii) where binocular vision has been established but the squint is still in some degree present, operation should be undertaken soon. In Case i orthoptic treatment will be given a fresh chance; in Case ii a physiological cure should be obtained.

Prognosis

From the foregoing remarks it will be seen that the cases which do best with orthoptic treatment alone are the slighter ones, especially the accommodative type, but that combined with operation a physiological cure may be hoped for, except in cases of persistent amblyopia or false projection or those with complete lack of fusion sense. The sooner the child is seen after the squint has commenced the greater is the chance of physiological cure, for amblyopia and false projection will have had less time to develop.

Criteria of Success

There are many standards by which the ultimate success of orthoptic treatment has been assessed. The following has been suggested for universal adoption.

TABLE II.—*Proposed Standard: Operative and Non-operative Cases*

1. Tonic Convergent Squint (Non-accommodative):	
Synoptophore (or equivalent) (Simultaneous perception picture)	0°–3° convergence with glasses
Adduction	20°–30° with and without glasses
Adduction	5° with and without glasses
Rod	0°–3° esophoria
Wing	0°–6° esophoria
Worth's lights	Four with and without glasses
Bar-reading	With correction
2. Convergent Squint (Accommodative).	Child wearing up to 3 spheres:
Synoptophore (Simultaneous perception picture)	0°–5° convergence with glasses
Adduction	20° with and without glasses
Adduction	5° with and without glasses
Rod	0°–5° with glasses 0°–10° without glasses
Wing	4°–6° exophoria to 0°–3° esophoria
Worth's lights	Four with glasses. Able to get four mistily without glasses
Bar-reading	With correction
Binocular vision	6/6 with glasses. (Each eye 6/6 separately.)

Slight variations should be made for cases with higher hypermetropia, especially allowing a lower degree of binocular visual acuity, without glasses.

Results

Two series of cases may be quoted. (A) 169 cases completed at the Royal Westminster Ophthalmic Hospital in 1936, eighteen of these being rejected after a short trial. (B) 100 cases of my own accepted by the squint departments at the Royal Westminster Ophthalmic Hospital and the Hospital for Sick Children, Great Ormond Street, thirteen cases being rejected after a trial.

	A	B
Straight. Binocular vision	52	33
Cosmetic success	23	8
Some improvement	1	2
Not improved	3	2

In both series the remainder (slightly less than half) had operation performed, the results being as follows:

	A	B
Straight. Binocular vision	40	20
Cosmetic success	24	19
Some improvement	4	2
Not improved	4	1

Percentage Results of Original Totals

	A	B
Straight. Binocular vision	92=54%	53%
Cosmetic success	47=28%	27%
Some improvement	5= 3%	4%
Not improved	7= 4%	3%
(Rejected after trial	18=11%	13%)

I have no details of the results of any operations performed on the rejected cases in Series A. Of the thirteen cases in Series B rejected after trial ten were cosmetically straight after operation, bringing the percentage of cases in this category up to 37.

In Series B the average angle of squint in those cases submitted to operation was 25 degrees; in those not submitted it was 12 degrees. The reasons for refusal in the thirteen cases which were rejected after trial in the orthoptic departments concerned were as follows:

Squint "from birth." No binocular vision	6
Persistent amblyopia	2
Poor mentality	1
Others	4

These last were all over 14 years of age, with many years' history of squint.

Conclusion

What, then, are the advantages of orthoptic treatment? It will be seen from the above results that nearly half the cases had to have operation, and it may be argued that some of the others would have come straight in time with glasses if left to themselves. In the first place we now have a much higher standard than in the old days when the cosmetic result was the only criterion. Physiological cure, with full binocular vision, must be aimed at, and this is the more important in these days of flying and high-speed cars, and of highly specialized games-playing. Then there is no doubt that operation is needed less often when orthoptic treatment is employed; the operative results are better and more permanent, and a second operation may be avoided. (Of the forty-two operation cases in Series B only six required a second operation.)

Orthoptic treatment is not a cure for all cases of squint, nor is it, unaided, a complete cure in many others; but it is a most valuable adjunct, and makes for a much higher percentage of real successes.

I am much indebted to Miss Collyer of the Royal Westminster Ophthalmic Hospital Orthoptic Department for her help in working out these results.

R. Valat (*Thèse Paris*, 1937, No. 538) records fourteen cases of pink disease seen in Bas Limousin, France, during the period 1933–6, in children aged from 14 months to 9 years. The disease occurred in a sporadic form, and was found exclusively in the rural population. Incomplete or atypical forms were common. The early stage was manifested by various symptoms, and often by digestive disturbances. At the height of the disease physical symptoms, asthenia, muscular hypotonus, and tachycardia were always present. Three children recovered; in one case death was due to tuberculosis; and in ten cases the issue is not recorded.

Clinical Memoranda

Sarcoma of the Thyroid

A man, aged 68 years, was admitted recently complaining of a "lump" in the epigastrium. He failed very rapidly and succumbed ten days after admission.

Case Report

He gave a history of rapid loss of weight (two stones in four weeks), associated with weakness, anorexia, and debility; a swelling in the neck for two to three years which had got worse lately; a fullness in the epigastrium associated with pain when he was in the upright position, being weighty to the right side when in the recumbent posture; and a cough for two weeks. The swelling in the neck was just about the same size all the time it was recognized. This man had always been well and healthy, engaging in active employment till four weeks before admission, when he was accidentally struck in the neck on the swelling by an iron pipe. The swelling was thereafter noticed to be growing larger, leading to the various symptoms reported. There was a history of neoplasm in the family.

The patient on admission was thin, pale, debilitated, asthenic, showing slight jaundice in the conjunctivae and signs of recent rapid loss of weight. The thyroid was enlarged in the left lobe, feeling soft and cystic superficially, but firm and fixed deep down. The liver was markedly enlarged, extending right down to the umbilicus, with irregular edges and knobbly surface. The cough was frequent, forceful, and productive, the sputum being mucus homogeneously blood-stained. Form and movement of the chest were good and symmetrical. Breath sounds were vesicular, with small patchy changes bilaterally. There was no renal tenderness and no haematuria.

As the swelling in the neck enlarged, the left recurrent laryngeal nerve became more and more involved, resulting eventually in complete paresis, and the voice uttered only in one brassy tone.

Necropsy showed a goitre enlarged in the left lobe only, with a soft, sanguinary cystic mass of necrotic tissue lined by a necrotic wall. Deep down it was firm and fixed to the adjacent tissues; here it cut with a firm edge though the centre was soft. The liver was much enlarged and riddled with secondary growths, which were soft and resembled macroscopically the cystic mass in the thyroid; the parts not involved were slightly bile-stained. The lungs showed multiple small growths in all the lobes. The spleen was slightly larger than the average, of normal shape, colour, and consistency, but contained several metastatic growths. The kidneys were unaltered in shape, size, and consistency, and contained just a few small very early metastatic growths. Metastases were found in the para-aortic glands, the glands in the porta hepatis, and also those in the smaller curvature of the stomach. The stomach wall itself showed no involvement. No lesion was found in the bone.

Histologically the thyroid showed a polymorph-celled sarcoma of a rapidly disseminating type. Specimens of the liver and of the lung showed a similar picture. The blood Wassermann reaction was negative. A barium meal showed no lesion in the gastro-intestinal tract. A blood count showed: haemoglobin 85 per cent., total red blood cells 3,800,000 per c.mm.; colour index 1.1; and total white blood cells 15,625 per c.mm.

Commentary

The condition is interesting in view of its apparent incitement by trauma; of the rapid and widespread metastases; of the absence of changes in the bone; and of the extreme cachexia, debility, and fatality within a short space of time.

EDWARD CHRISTIANSON, M.B., Ch.B.Ed.
Warneford General Hospital,
Leamington Spa.

Reviews

POSTGRADUATE SURGERY

Postgraduate Surgery. Edited by Rodney Maingot, F.R.C.S., with an introduction by Lord Moynihan of Leeds. Vol. iii. (Pp. 2,016; illustrated. 70s. net each volume; £9 9s. a set of 3 volumes.) London: Medical Publications, Ltd. 1937.

The third and final volume of this work, the first and second parts of which were reviewed in the *Journals* of April 4 and August 22, 1936, respectively, deals with plastic, obstetric, and cardiovascular surgery; with the surgery of the eye, ear, nose, and throat, orthopaedics, the teeth, venereal diseases; with certain features of general surgery such as the medical aspects; and with physical medicine and deep *x*-ray therapy. There are thirty-two contributors to this volume, which consists of some 2,000 pages and over 1,000 illustrations in the form of text-figures. The number of contributors has risen considerably, for there were twenty to the first volume and eighteen to the second; many of the last group of thirty-two have, however, already written articles for volumes i and ii.

An outstanding chapter is that on the dissemination of malignant disease by Mr. Sampson Handley, for herein he summarizes his views of many years' observation and study, and his is a name which is recalled whenever permeation, a term which he introduced in 1904, is mentioned in connexion with cancer spread. Dr. Manson-Bahr writes with authority on elephantiasis, particularly the filarial variety, Dr. W. M. Levitt on deep *x*-ray therapy, and Mr. Bowdler Henry on the teeth. In the section on the oesophagus Mr. Laurence O'Shaughnessy gives an account of the present position of the surgery of the oesophagus, but while cardiospasm and its treatment is mentioned, there is no reference to spasm of the supra-oesophageal sphincter and the treatment of this condition.

Mr. W. H. Ogilvie, writing on abdominal hernia and its treatment, points out that the essential question which must be answered in connexion with the operative treatment of a particular case of inguinal hernia is, "Can the normal mechanism of the canal be kept?" Undoubtedly there is an all too willing tendency on the part of some surgeons to mutilate the beautiful inguinal sphincter on the least provocation and even in quite young subjects. Mr. T. Pomfrèt Kilner writes on plastic surgery, Mr. Aleck W. Bourne on obstetric surgery, and this volume also contains contributions on the eye by Mr. F. A. Williamson-Noble, the ear by Mr. F. W. Watkyn-Thomas, the nose by Mr. P. J. Jory, and the throat by Messrs. Lionel Colledge and Charles Keogh. The editor, Mr. Rodney Maingot, writes on affections of the lymphatic vessels, on lymphadenitis, and on the treatment of tuberculous cervical glands.

While this work of three massive volumes is easily readable because of the large clear print, the question arises, when there are so many excellent and comprehensive monographs on special subjects available, just how useful such an ambitious inclusion of the whole surgical field will prove to be. Time works so much greater ravages in certain areas of the field of surgery than in others. Though this book is unlikely to replace the standard works on systematic and operative surgery, it should appeal to those who like to have a recent survey of a large subject available in a few volumes.

CHEMICAL PROBLEMS OF NUTRITION

Chemistry of Food and Nutrition. By Henry C. Sherman, Ph.D., Sc.D. Fifth edition. (Pp. 640; 38 figures. 12s. 6d. net.) London: Macmillan and Co., Ltd. 1937.

Many readers will join us in welcoming the fifth edition of Professor H. C. Sherman's well-known textbook. This work appeared first in 1911, and through the subsequent editions it has covered the whole period of that revolution in the knowledge of nutrition which has constituted one of the most important advances in medical sciences made in the present century. During that period the author has managed to keep his textbook up to date and to maintain it at a more or less constant size. In view of the speed and extent of the changes in the science this is a very remarkable achievement; it has of course involved the repeated recasting of the whole material. The present edition bears the simple statement, "completely rewritten," and examination of the text shows that it has been rearranged and revised so as to give a properly balanced picture of modern knowledge of nutrition.

The importance of the subject needs no emphasis. Sherman's textbook has a firmly established reputation as one of those invaluable volumes where one can find a full account of established knowledge and a clear discussion of difficult points regarding which knowledge is imperfect or conflicting. The present edition maintains this well-earned reputation. Its special feature is that it deals with all aspects of nutrition, chemistry of food, digestion, fuel value of food, protein and mineral requirements, vitamin requirements, growth and dietary standards. One of the chief difficulties in dietetics has been the estimation of the relative importance of unlike factors, such, for instance, as the total calorie value of a diet and its content in minerals and vitamins. The controversies that so often arise show how difficult it is to prevent enthusiasm about the importance of one aspect of dietetics leading to a neglect of other essential aspects; indeed, many textbooks suffer from the same fault and over-emphasize aspects in which the authors are particularly interested. Professor Sherman displays a remarkably well-balanced judgement, and the outstanding merit of his textbook is that it gives a picture of the whole problem of nutrition drawn in true perspective. Finally it may be mentioned that he provides the latest information even in such rapidly changing subjects as the chemistry of the vitamins.

A FRENCH MEDICAL ENCYCLOPAEDIA

Pratique Médico-Chirurgicale. Publiée sous la Direction de A. Couvelaire, A. Lemierre, et Ch. Lenormant. Supplément. Tome IX. (Pp. 960; 276 figures. 165 fr.) Paris: Masson et Cie. 1936.

The ninth volume of the system of medico-chirurgical practice, edited by Drs. Couvelaire, Lemierre, and Lenormant, forms a supplement to the work published in 1931 and has been brought up to date by a thorough revision of the articles in the previous volumes and the addition of much new matter. As the editors' names imply, the work is an encyclopaedia of medicine (Lemierre), surgery (Lenormant), and obstetrics (Couvelaire), to which contributions have been made by nearly a hundred other specialists. Among the best known of these the following writers with their articles may be mentioned: E. Aubertin (cardiovascular medication, insulin treatment of malnutrition, serotherapy, tuberculous ultra-virus); L. Bazy (vaccine therapy in surgery); M. Chevassu (Steinach's operation, ureteral catheterization, urethroprostatography); O. Crouzon (social insurance); M. Duvoir (barbiturism, professional diseases); L. Gatellier (duodenal cancer, duodenal diverticula); R. Hazald (anatoxins, histamine, oxygentherapy, prescriptions, vitamins); C. Joyeux (insect bites, myiasis, sleeping sickness, tick fever); L. de Lavergne (Malta fever, typhus fever); R. Leriche (arteriography); H. Morel-Kahn (electrodiagnosis, electrotherapy); M. Piéry (acclimatization, climatotherapy); J. Ravina (abortion); R. Soupault (embolectomy, gastro-enterostomy); J. Tapie (agranulocytosis); and Pasteur Valerie-Radot (anaphylaxis, asthma, migraine, and urticaria). Reference should also be made to the following articles: recent progress in anaesthesia, by R. Monod; arthritis deformans of the hip, by P. Mathieu; cholecystography, by N. Auguste; collapsotherapy, by R. Bérard and F. Dumarest; diseases of the pancreas, by P. Brocq; radiotherapy, by J. Belot; streptococcal infections, by A. Lemierre and J. A. Liévre; suprarenal insufficiency, by P. Oury; and surgical treatment of cardiac symphysis, by C. Lenormant. The volume is liberally interspersed with skiagrams and other illustrations, and may be cordially recommended to those seeking information on contemporary French medicine.

PRINCIPLES OF EPIDEMIOLOGY

Epidemiologie. Grundbegriffe und Ergebnisse. Von Prof. Dr. Med. Adolf Gottstein. (Pp. 285; 16 figures. RM. 15. GRM. 17.40.) Leipzig and Vienna: F. Deuticke. 1937.

In this interesting volume Professor Gottstein expounds for the benefit of medical readers the general principles of epidemiology—that is, the study of disease as a mass phenomenon. The earlier sections are largely concerned with the problems of immunity, and the distinction between what we should call individual immunity and herd immunity is carefully drawn. The author then deals with some statistical principles, and he devotes a separate lecture to the dissection of the curves of distribution in time of epidemic disease. He makes so free and fruitful a use of analogy—for instance, the analogy between the statistical point of view in modern physics and in epidemiology—that it is a little surprising that he does not call attention to the methods used by economic statisticians in studying long period and short period cycles of trade.

The later part of the book is devoted to a general study of the interrelations of general factors, cultural, economic, and heritable, upon the rise and fall of disease, and includes a drastic criticism of pseudo-statistical demonstrations—based, as he remarks, upon the arithmetic of a maidservant (Milchmädchenrechnungen)—on the importance of selection upon disease-prevalence, which seem to have a vogue in Germany. The book concludes with a graceful essay on the attitude of great poets, among whom Shakespeare has pride of place, towards the general problems of disease. As Professor Gottstein remarks, the ordinary man may well learn from the failure even of men of creative genius to rise superior to the limitations of their time, that it is not poetic genius but patient study of scientific facts which leads to progress. This is a book which should do much good in Germany, because it enforces strongly the quantitative or statistical point of view which, almost universally held in England and America, is, we think, much less popular on the Continent.

Professor Gottstein has had a long experience, and was a young man in the days when the supremacy of Germany in most fields of medical research was admitted by the rest of the world. Perhaps his exposition is not quite free from the suggestion that this supremacy extended to the science of epidemiology and the methods of medical statistics. Perhaps too little use is made of first-rate

foreign and too much of second-rate German work. The beginner would hardly realize the epoch-making importance of such men as Farr, Galton, Pearson, and Stevenson in the creation of the modern instruments of medical-statistical research, or the significance of such researches as those of Hamer, Brownlee, and Soper into the phenomena of periodicity. We have named only investigators no longer living. One must, however, remember that almost all the work of Farr and Stevenson was published in official reports, and official reports are too little read in England for it to be right to complain that foreigners do not read them at all. Professor Gottstein has at least paid us the compliment of reading three English treatises on epidemiology, and we hope that the essentially sound doctrine he preaches will be widely accepted in his own country.

VENTILATION AND HEATING

Modern Principles of Ventilation and Heating. Three Lectures given at the London School of Hygiene and Tropical Medicine under the Heath Clark Bequest to the National Institute of Industrial Psychology. By T. Bedford, D.Sc., Ph.D. (Pp. 85; 23 figures. 4s. 6d. net.) London: H. K. Lewis and Co., Ltd. 1937.

In his very readable book dealing with a subject which is usually regarded as coming within the purview of the engineer and architect, Dr. T. Bedford has drawn together a mass of useful information, which is of great significance to the medical profession and, in particular, to those members who take an active interest in housing and in the provision of healthy and comfortable conditions in hospitals and institutions. To the medical officer of health who is called upon to express an opinion on the adequacy and suitability of ventilating and heating systems the sections concerning methods and standards of ventilation and the assessment of conditions of warmth comfort and causes of discomfort will prove invaluable.

The book opens with a short historical survey of heating practice from Roman times, and then more detailed attention is given to modern practice in respect of panel heating, convection heating, and air-conditioning by which heating, ventilation, and humidity are controlled. Particular attention is paid to the problems of ventilating and warming factories, and the effects of heat, humidity, and ventilation on the sickness and accident rates among the workers in several industries are discussed. The chapters in which these matters are dealt with will be of special value to industrial medical officers and others concerned with the health and welfare of the industrial population. It is most opportune that this book should have appeared at a time when renewed interest has been aroused in problems of ventilation and heating under the provisions of the new Factory Act. Apart from this, however, it will repay study by general practitioners and by students not only of medicine but of engineering in its various branches, for it deals with matters which are of immense interest and significance to comfort and health whether at work or at rest.

NEUROPATHOLOGY

Pathology of the Central Nervous System. By Cyril B. Courville, M.D. (Pp. 344; illustrated. $5.75.) Mountain View, California: Pacific Press Publishing Association. 1937.

There is always a place for an original treatment of a subject, and Dr. Courville adopts such an unusual point of view that his textbook will be welcomed by many, especially by those whose interest lies more in the causation of disease than in its microscopic anatomy. The author deals at greatest length with the three commonest lesions of the brain—vascular disease, infection from the cranial air sinuses, and trauma. These lesions are of such everyday occurrence that their diagnosis and treatment fall more to the general practitioner than to the specialist. But many questions in their pathology remain unsettled, and these Dr. Courville has attempted to answer. The ingenious diagrams with which he illustrates the possible causes of cerebral haemorrhage, the routes by which infection from without may reach the brain, and the mechanism of cerebral contusion, greatly help the exposition of these subjects.

In other respects the book is disappointing. Histology is given such a secondary place that even the author's own brilliant work on cerebral injury is scarcely even summarized. This leads to a certain lack of balance and makes the reader wonder whether the book would not have been improved if histology had been completely omitted and more space given to the broader questions of aetiology and pathogenesis. To say that the book suggests such a treatment of the pathology of the nervous system is commendation rather than criticism. The fault in this case is that the author has not had the courage to carry his mode of presentation to its logical conclusion.

Another novel feature is the final chapter entitled "Clinico-pathological Aphorisms." In it the author gives us the fruit of his experience both as a clinician and as a pathologist. This chapter is partly a synopsis of the rest of the book, but contains many valuable observations which do not appear elsewhere in the text.

Notes on Books

Précis de Médecine Coloniale, by CH. JOYEUX and A. SICÉ (170 fr.), now comes out in a new edition. The term *précis* might suggest to English readers a short synopsis; the "Collection de Précis médicaux," issued by Masson et Cie, the well-known Paris medical publishers, comprises, however, a series of textbooks, and this volume upon "Médecine coloniale" is no exception. The title *Médecine Coloniale* might, again, suggest a book upon general medicine for the use of those living in the colonies, whereas in fact it is what we should call a textbook of tropical medicine. It now appears in its second edition, ten years after the first, much enlarged and brought up to date, but preserves the same method of arrangement of the subject-matter. A commendable feature in the book is the method of bibliographical references adopted, whereby the authors' names are given with year, date, and letters indicating in which of some forty-odd journals dealing with tropical medicine the original paper will be found. Though naturally this standard work is intended to be used by French-speaking tropical practitioners it can be commended to the notice of others. It is well written and makes refreshing reading.

On October 9 (p. 730) we gave some account of the special supplement which was issued by the *Times* on September 30 to mark the inauguration of the Government's health campaign. This supplement has now been reprinted in book form and entitled *The Nation's Health* (The Times Publishing Company, 2s. 6d.). It provides an authoritative survey of the public health services of the country, and consists of forty-two distinct articles. The book itself is appropriately divided into sections on the national health campaign; public health services; physical training and recreation; home, workshop, and playground; the fight against disease; food and diet; and mental hygiene. Most of these sections are profusely illustrated, and many of the articles in them have been contributed by well-known medical men.

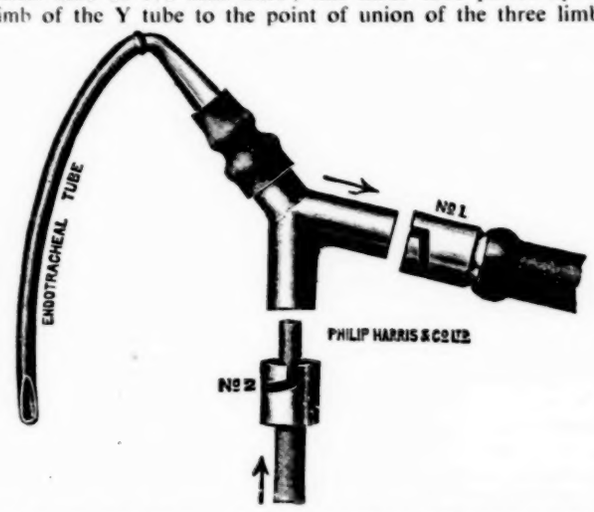
Synthetische Morphologie der Niere des Menschen, by Professor MARTIN HEIDENHAIN of Tubingen (Leiden: E. J. Brill, 10 guilders), contains a detailed description of the structure and development of the human kidney. The author traces the mode of development of the organ from its first recognizable appearance as an object 2 or 3 mm. long, and shows how by a process of division of the collecting tubules the final complex adult organ is built up. In his preface the author mentions that at the end of last century he protested against the purely cellular conception of morphology, and pleaded for a synthetic outlook which paid proper regard to the functions of the organ as a whole. He claims that the study of the development of the kidney provides a particularly clear example of the process of division with synthesis. Professor Heidenhain's morphological outlook is in harmony with the views of Driesch, and an interesting argument in support of his outlook is followed throughout the volume.

Preparations and Appliances

ATTACHMENT FOR ANAESTHETIC APPARATUS

Dr. L. T. CLARKE writes from Queen's Hospital, Birmingham:

Anaesthetists will agree that the time factor is important in the anaesthesia of infants in the first few months of life. The least degree of respiratory effort shortens the available operation time. With this in view I have designed an attachment, which can be used with any anaesthetic apparatus capable of delivering a gentle stream of oxygen over the surface of ether, for the purpose of endotracheal anaesthesia. It consists of a simple Y tube, with a diameter of half an inch. To one limb, the vertical one, is attached, by a stout rubber union, a Magill endotracheal catheter connexion. The other two limbs have metal connexions with bayonet catches, and these are interchangeable. Number 1 has an internal diameter of 1/2 inch, and to this is attached 12 inches of light rubber tubing of similar bore. Number 2 is solid, but perforated by a light metal tube of 1/8 inch bore; this inner tube passes up the limb of the Y tube to the point of union of the three limbs,



and is connected externally by a length of light rubber tubing to the source of anaesthetic vapour.

The idea is this: The child is anaesthetized, and a small rubber Magill catheter is passed into the trachea, and this is connected to one limb of the Y tube. Oxygen and ether are delivered by connexion No. 2 up to the crossways of the Y tube. The inspiration and expiration of the child are unhampered, because the remaining limb of the Y carries a foot-long exhaust tube freely opening to the outer air. It is to be noted that the exhaust pipe and all limbs of the Y are of greater diameter than that of the child's trachea, and yet the length of the exhaust is sufficient to prevent too free an escape of the anaesthetic vapour.

This device does away with all rebreathing bags and expiratory valves, and it reduces dead space to a minimum. The exhaust tube hanging over the edge of the table is a convenience to the anaesthetist, who may wish to listen to the breathing. The device is simple and easily sterilized. It was made to my specification by Messrs. Philip Harris and Co. (1913) Ltd., Edmund Street, Birmingham.

A NON-PROJECTING ENTEROTOME

Mr. M. C. OLDFIELD, F.R.C.S. (senior surgical tutor, the General Infirmary at Leeds), writes:

Crushing of the spur as a preliminary is essential to the closure of the faecal fistula which follows a Paul's operation or an ordinary colostomy. The patient's discomfort, with the usual enterotome in place, is caused by the leverage action of the handle of the instrument, which projects far beyond the edges of the wound. Whenever the patient moves in bed the handle tends to be pressed upon or jarred. Slight movement or contact upon the handle gives rise to sharp twinges of pain, the severity of which depends directly upon the length of the projecting handle. This objection to

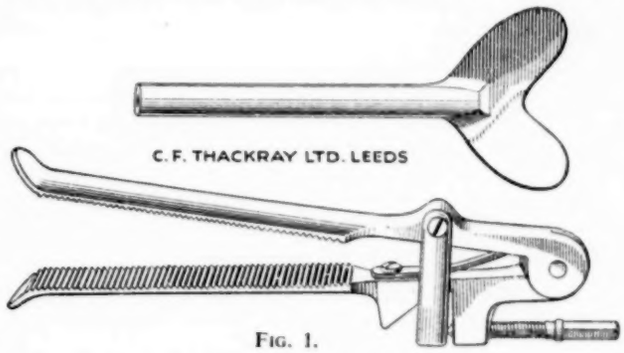


FIG. 1.

the usual type of enterotome was pointed out to me by Mr. L. R. Braithwaite, and after trying various designs the instrument illustrated was so devised as to obviate this leverage action of the handle. The handle (Fig. 1) is replaced by a long key, such as is used to wind up an old-fashioned clock or a toy engine. The key is removed after approximating the blades to the degree required, so that nothing is left to project above the edges of the wound. Upon alternate days the key is reapplied to tighten the grip on the spur, and then taken away again. The mechanism is simple (Fig. 2), and it is rare for the instrument to require adjustment. By turning the key (A) a screw (B) is driven downwards on to a strong steel collar lever (C), hinged upon the opposite blade. This collar acts upon a sloping steel shoulder (D) jutting out from the right-hand blade. The further the screw and collar are depressed the nearer the right-hand blade becomes approximated to its fellow. A small flat spring (E), inserted between the upper ends of the blades, facilitates introduction. As in the Paul, or Mikulicz, instrument, the face of each blade is serrated and the ends are everted, but the blades are rather wider, which lessens the danger of haemorrhage due to cutting through, and obviates the repeated reapplication which was often necessary with the narrower-bladed instrument. This enterotome has been found during the last two years to serve its purpose efficiently without causing the patient the discomfort of the old instruments. I am indebted to Mr. L. R. Braithwaite for his helpful suggestions, and to Mr. George Blomfield for making the original drawings. The instrument is made by Messrs. Chas. F. Thackray, Ltd., Park Street, Leeds.

FIG. 2.

Nova et Vetera

ERCOLE LELLI AND HIS ÉCORCHÉ

In a scholarly and beautifully illustrated article Professor Harvey Cushing,[1] who has so often acknowledged the debt of modern surgeons to anatomists, especially those fathers who begat us, sketches the life and achievement of Ercole Lelli of Bologna, an anatomical artist whose models of "muscle-men"—the skin and superficial tissues being absent—or *écorchés* were much admired in the eighteenth century. This biography is led up to by an admirable account of the anatomical school of Bologna, where Guglielmo da Saliceto taught anatomy and surgery in the thirteenth century, Mondino de' Luzzi in the next century, Berengario da Carpi and Maggi in the sixteenth century, when Vesalius came over from Padua in 1539 to lecture on anatomy for the first time in terms of function. As was natural enough, the Bolognese took too much pride in their teachers to attempt to annex the anatomist who has been described as "the most commanding figure in European medicine after Galen and before Harvey." Bologna had the teachers, but they were not given an anatomical theatre worthy of them until 1638; it was then "a miracle of art," and soon became famous throughout Europe. It was nearly a century later—in 1734—that Lelli came on the scene, when the anatomical theatre was to be renovated, and he volunteered to provide two anatomical figures, male and female, *écorchés*, as supports for the canopy over the seat of the professor so that he could use them conveniently for demonstrations. Illustrations in Cushing's article show Ercole Lelli's portrait with a myological *écorché*, and also one of Volcher Coiter painted in 1575 with an *écorché*, thus long antedating Lelli. The theatre, decorated in addition with statues of Hippocrates, Galen, and anatomical fathers of Bologna, is shown in an illustration taken from an illuminated document; it gives the memorable séance in 1734, when that "prodigy of learning and chief ornament of her sex," Laura Maria Caterina Bassi, recent professor of universal philosophy at Bologna and later to become famous as the teacher of Lazzaro Spallanzani, the physiologist and experimental morphologist, expanded her thesis to a crowded audience, while beside her there sat two women for her moral support. Another illustration bearing on the subject of *écorchés* is a reproduction of Michelangelo's "Last Judgement" in the Sistine chapel, showing St. Bartholomew sitting astride a rock at the feet of Jehovah, with a brandished knife, the instrument of his martyrdom, in his right hand, and his own skin hanging down from his left hand, the remarkable point being that his body is normally covered by skin.

The Bologna Anatomical Museum

The reputation of the renovated theatre impressed those in the seats of the mighty, including cardinals, and a museum for artistic anatomical models was established with Lelli as custodian, and a year later a clever young sculptor, Giovanni Manzolini, became his assistant, and with the help of a surgeon, Boari, outstripped his chief, but in his turn was excelled by his pupil and later wife, Anna Morandi, whose anatomical preparations attracted Royal interest. The wax effigies of these two artists, still preserved in Bologna, are reproduced in this article. Lelli was interested in physics and mechanics, became director of the Mint, superintendent of a factory for making instruments, and president of the Academy of Sciences. After his death Luigi Galvani, the pioneer of electrophysiology, was appointed custodian of the anatomical museum, and in 1777 delivered a public oration in praise of Anna Morandi Manzolini on the occasion of the posthumous acceptance of her anatomical preparations for public use by the Institute of Arts and Sciences.

Professor Harvey Cushing expresses some regret that, although in his student days many were encouraged to supplement their textbooks by purchasing plaster models and painting on them muscles and so forth, all this is past, and modern anatomical science is no longer concerned about the relationship of anatomy to art. But he likes to picture the spirit of Ercole looking down with approval when a department of art as applied to medicine was established at the Johns Hopkins Medical School, and on Max Brödel's work there forty years ago.

HUMPHRY ROLLESTON.

[1] Cushing, H. (1937). *Yale J. Biol. and Med.*, **9**, 199–213, Figs. 18.

OSLER'S FIRST APPEARANCE IN PRINT

Such was the quality of Osler's greatness that to-day, in Britain and in America, anything from his pen has a market value, while his earliest writings have become so scarce as to be practically unobtainable. Thinking perhaps along these lines, and possibly in sentimental mood, the *Bulletin of the* (Johns Hopkins University) *Institute of the History of Medicine* has reprinted (January, 1937, **5**, 91–93) his first paper, "Christmas and the Microscope," which was published in Hardwicke's *Science-Gossip*, London, February 1, 1869. This semi-popular magazine is now defunct and in little demand, with the exception of the fifth[1] volume (the date of this appears as 1870 on the title-page, as 1869 on the back), which is relentlessly pursued by Oslerians on both sides of the Atlantic. Some ten years ago the writer of this note had the good fortune to pick up a copy in Farringdon Street for threepence. About that time Dr. W. W. Francis, the Osler Librarian, through advertising acquired his copy for the *Bibliotheca Osleriana*, but he had to buy a complete and expensive set. Quite recently a New York antiquarian bookseller listed the February, 1869, issue in original wrappers for eighteen and a half dollars, while another bookseller in the same city offered the whole volume in half-calf for thirty-two and a half dollars.

To his article, written when he was 20 years old, Osler referred as the beginning of his inkpot career, which showed his fondness, even at the very start, for tags of quotations, this one from Horace, then a familiar friend. Occupying one and a half columns of page 44 and signed W. Osler, Dundas, Ontario, the paper tells pleasantly and with a touch of humour how on Christmas afternoon he found several species of diatoms and infusoria in an unfrozen spring on the road between Dundas and Hamilton. When he returned home with his spoils the light was just beginning to fail, and he had to wait patiently until evening before he could satisfactorily study them.

A casual glance through the volume also shows on page 94 two letters signed W. O. (? William Osler), and which deal with the butcher's broom and the fish-moth. Like Osler, many physicians have sported an early interest in botany or zoology, and the subject of "The Doctor as Naturalist" is a popular one in medical journals. It is interesting to recall that at the same age at which Osler wrote his first paper, James Paget, with the help of his brother Charles, published in 1834 a "Sketch of the Natural History of Yarmouth and its Neighbourhood."

W. R. B.

[1] A preliminary note in the *Bulletin* incorrectly gives the volume number as 44.

The Commissioner for the Special Areas has made a final offer of a grant of £90,000 towards the cost of building a new general hospital at Whitehaven, on condition that the Cumberland County Council and the Whitehaven Town Council, who are collaborating with the Whitehaven hospital authorities, contribute £20,000 and £2,000 respectively.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY NOVEMBER 20 1937

THE POSITION OF CONSULTANTS

Questions affecting the position of consultants in relation both to the clinics of local health authorities and to general practitioners and their patients, especially their insured patients, are bound to have prominence during the next few years. Indeed, the Council of the British Medical Association has declared in its Supplementary Report (*Supplement*, June 19, p. 386) that this "constitutes one of the major matters on which it is necessary that the Council should formulate and recommend a policy to the Representative Body at its meeting in 1938." It is not too soon, therefore, to attempt a general view of the situation and to state some of the main points which must be the subject of consideration.

Three main shortcomings or disadvantages of the national health insurance scheme may be regarded as admitted. It does not include the dependants of insured persons or other classes of persons below the income line that is prescribed for those among the insured who are non-manual workers. It is limited to a general practitioner service and does not include that of consultants and specialists, whether clinical or pathological. It is almost completely divorced, both administratively and clinically, from other branches of the public health service. The Association has an established policy with regard to each of these points. It has declared that the medical benefits of the scheme should be extended to the above-mentioned classes; that a consultant service and all necessary specialist and auxiliary forms of diagnosis and treatment should be available for the individual patient normally through the agency of the family doctor; and that priority of the former of these extensions over the latter is, on the whole, desirable. It has formulated, too, an adjustment of administrative machinery which would bring all forms of medical provision into much more intimate connexion. On account of the financial considerations involved there is likely to be an interval of some years before the scheme is extended to include the dependants and others of like economic status, apart from the boys and girls who enter employment before they are 16 years of age who will shortly become insured when the Bill at present before Parliament passes into an Act. But in considering other points it is advisable to bear in mind this ultimate extension of clientele, large enough to bring some two-thirds of the whole population within the scheme.

The much lower order of expenditure involved tends towards an earlier extension which will by some means or other provide a consultant and specialist service. Conversations exploratory of such an extension have now for some time been proceeding. In the meanwhile a number of local health authorities have been appointing whole-time or part-time consultants not merely as members of the visiting staffs of Council hospitals, but as officers in charge of special clinics, as obstetricians who may be called in by practitioners attending maternity cases, and, in some instances, as experts in other branches of medical and surgical work available for domiciliary calls to public assistance cases or more generally. The recent admirable report of the Departmental Committee on Scottish Health Services envisages the development of a consultant service by the latter method. Its recommendation reads: "It should be a definite function of the authorities administering the statutory medical services to supplement where necessary the existing specialist, diagnostic, and other facilities so as to meet the needs of general medical practice." There is much to be said in favour of this suggestion provided that the fulfilment of certain conditions is regarded as essential. It would at any rate forge a very effective clinical link between the insurance service and the medical services provided by local authorities, whereas the establishment of a consultant service wholly within the insurance scheme would leave the two health systems as isolated from one another as before.

The first main question for consideration, then, is, by which of these alternative methods—the insurance method or the local government method—the consultant and specialist service should preferably be provided. The present enunciated policy of the British Medical Association does not decide this point: it merely declares that there should be such a service. The second main question is happily less difficult, and is one on which the profession has shown that it has a very firm opinion. It relates to the method by which the consultants lists of those available in each area shall be compiled, whether it be under the auspices of an insurance committee or of a local authority committee. It will doubtless be generally and strongly held that every registered medical practitioner who satisfies the required conditions shall have a right to have his name placed on the list if he so wishes, thus becoming completely available so far as domiciliary consultations are concerned and eligible for con-

sultations at clinics so far as time, opportunity, and administrative possibilities allow. It will probably be held almost as strongly that judgement as to whether a practitioner satisfies whatever criteria are laid down for the admission of his name to a list should be by a purely professional tribunal with perhaps a carefully guarded right of appeal in certain circumstances. If these provisos are conceded it would seem to lessen the importance of the first question from the purely medical point of view, though that question would remain of fundamental importance from other aspects.

The third main question for consideration is certainly much simpler than the second, though it may present even more difficulty than the first. It concerns the definition for this particular purpose of a consultant. It may be suggested that there are three classes of practitioner of varying degrees of status and authority within this field. There are those who possess professional academic qualifications of recognized distinction, who have by reason of hospital or other appointments an extensive experience in particular directions, and who assume responsibility for patients only at the request of, or in conjunction with, a general practitioner or professional colleague. There are those who, whether possessing any outstanding qualification and experience or no, exercise their undoubted right of limiting their practice to certain fields or in certain ways, but who accept patients in the same manner as a general practitioner does, or even allow themselves a wider latitude in this respect than most general practitioners observe. There are, thirdly, general practitioners who commendably cultivate to some degree a particular line of practice within their wider field. It is not unlikely that there are some county areas in which it might be necessary to utilize the services of all these classes in order to provide a consultants list adequate for all circumstances; but in the larger towns and more populous county districts where, as would usually be the case, the number of practitioners of the first class was sufficient, it would seem to be both in the public and in the professional interest to confine the list to members of that class. Here, at all events, is a matter of professional conduct and status which it is highly desirable to explore in an intraprofessional fashion before it is involved in public controversy. All the three main questions posed in this connexion are of great importance. Though they may involve some considerations that are not of a purely medical character, a unanimous or predominant professional opinion upon them might have a determining weight, and it behoves the Association, as representative of the whole medical profession, to give them early and very serious attention.

INTERNATIONAL CO-OPERATION IN SCIENCE

Preoccupation with the wars in Spain and China prevented the League of Nations Assembly giving more than polite attention to the speech which M. Herriot, former French Premier, made to it on the subject of intellectual co-operation, yet the speech was a cheerful account of progress towards a better organization of intellectual activities throughout the world. The work of intellectual co-operation, to which the League devotes some £10,000 a year, is intended to create the co-operative habit among the authorities, departments, and societies in different countries which are concerned with intellectual interests. One recent event has been a conference on higher education, held at the International Institute of Intellectual Co-operation in Paris, attended by nearly 200 rectors, deans, and faculty professors from thirty-eight countries and 110 educational institutions. The purpose of the conference was to deal with the numerous problems with which the universities are at present faced, including the organization of the various faculties, the question of special institutions, scientific research, and higher technical education. It resulted in the setting up of a permanent committee on higher education to ensure co-operation between the main centres of study and culture in the various countries. An international inquiry is also being conducted into the reorganization of secondary education, which is considered the key to the problem of overcrowding in the universities and liberal professions.

Under the same auspices another meeting recently took place in Paris. This was a conference between the scientific advisers of the League organization and the International Council of Scientific Unions, and to the outcome of their deliberations M. Herriot drew the special attention of the Assembly. "To-day," he said, "people are more than ever conscious of the need for co-ordinating the activities of research workers, taking stock of the position from time to time, and deciding on a systematic programme which, while especially valuable from the point of view of the furtherance of knowledge, shall also help to bring about a better understanding, so that the world may acquire an increasing control of its destinies." The following were among the plans drawn up by this conference in Paris, for the furtherance of which committees of experts will be called together: to promote exchange of views or "conversations" between the various representatives of the sciences, the meetings being at first confined to specialists in a single branch of the science and later extended to include representatives of cognate sciences; to continue the

work, already begun, of co-ordinating scientific terminology; also to continue the work on scientific bibliography, especially in the direction of encouraging the national academies and scientific societies of the countries speaking less widely used languages to prepare a bibliography of the scientific works in those languages, together with a translation in a world-wide language; to urge on the various national academies that no translation of scientific works should be published without previous consultation with the authors and affording them an opportunity of making the necessary amendments in the interests of science; to continue an investigation into the organization and resources placed at the disposal of scientific research, and to obtain information concerning international institutions of recognized scientific value which find it impossible to carry on their work owing to lack of funds, the position of such institutions to be brought to the notice of the League, and through the League to the appropriate Ministries in the different countries.

A further recommendation of the conference, which is well worthy of support, was that meetings of research workers in the same scientific field should be organized forthwith to deal, first of all, with such subjects as plant hormones, vitamins, and the nomenclature and terminology of genetics and cytology. A committee has also been appointed to draw up a list of old scientific manuscripts the publication of which would be desirable. "All our countries," said M. Herriot, speaking to the assembled delegates of fifty nations, "are the repositories of a legacy of culture which is both their individual glory and the common patrimony of mankind. They are resolved not only jealously to preserve, but to increase and enrich it."

TYPHOID FEVER AT CROYDON

The outbreak of typhoid fever at Croydon has received perhaps more than its due share of prominence and publicity by reason of the comparative rarity of such outbreaks in this country in recent years. The last two outbreaks of appreciable magnitude were the Bournemouth epidemic of the late summer of last year and the Malden (Yorks) outbreak of 1933, the one arising from infected milk and the other from a contaminated water supply. The majority of outbreaks in recent times have been attributable to infected milk or other article of food, water being but rarely incriminated. In the Croydon outbreak preliminary inquiries revealed that drinking water was the probable source of the infection, and subsequent investigations were directed towards detection of the manner and the extent of the contamination. The first case was notified on October 19, and by November 4 ten cases were under observation; to date there are 86 cases or suspected cases, with five deaths. The disease is thus seen to be of average severity and may conceivably be found to be more lethal, as the more recent cases have not yet reached the most dangerous stage of the disease. The first cases appeared over an area limited to no more than a twentieth of the total population of the borough; after November 1, when the low-level water supply from the Waddon and Surrey Street wells was chlorinated, all the cases but one appeared in houses which received water from wells of the high-level supply in Addington and Stroud Green. On November 4 this water was also chlorinated and the supply from a polluted well at Addington was cut off; the public health authorities were confident that the outbreak would thereby be terminated, although fresh cases may be expected up to the maximum incubation period (twenty-one days) after the measure was applied. Subsequently, samples of water were taken for bacteriological examination from the water supply of the houses in which cases of typhoid occurred in order to test the efficacy of the chlorination. In view of the heavy chlorination it was considered unnecessary to advise boiling the drinking water, although this would serve to remove the taste of chlorine, which is objectionable to some palates. Occupiers of houses in which there were large tanks or tanks which were only used at intervals were recommended to empty the tanks completely before taking water from them for drinking purposes. In view of the reports of the successful application in treatment of antibacterial serum the question arises whether prophylactic use of the serum is a practical proposition. The method is at least worth a trial for selected individuals where the risk of infection is high in the hope that the severity of attack may be mitigated, even although complete protection may not be conferred. From the recorded reports of the therapeutic employment of the serum it is not possible to forecast whether or not this hope is likely to be fulfilled. As regards prophylactic inoculation of typhoid vaccines to produce an active and a more lasting immunity in the population at risk, it is usually found in practice that the situation is well in hand before the prescribed inoculations can be given. In general, the more explosive the outbreak the more short-lived is its course. Moreover, untoward effects may follow inoculation if a dose of vaccine or its reaction should coincide with the onset of an attack; aggravation rather than attenuation may be the sequel. The method may be employed with reasonable expectation of success in protracted or widespread outbreaks, and is indeed the only really effective measure if the source of the infection is not detected or completely eradicated. Although, as a matter of experience, case-to-case infection is relatively infrequent in either selected groups or the community at large, it is found advisable to immunize in advance those specially exposed to risk: in fever hospitals a considerable proportion of the nursing staff is kept recently inoculated in readiness for an eventuality such as that under review. It is unlikely that wholesale prophylactic inoculation of the general population would ever be found necessary in this country.

"ON GETTING THE RASH OUT"

Under this intriguing title, Sir Walter Langdon-Brown, the Prosser White orator of the St. John's Hospital Dermatological Society, delivered a most stimulating discourse on the philosophy of dermatology.[1] He showed that the skin plays the most important part in maintaining the very restricted internal conditions under which cell life is possible, notwithstanding the enormous differences in external environment to which the various forms of terrestrial life are compelled to adapt themselves. Vertebrates that live in the water must be covered with an impermeable envelope so that their tissues may maintain their proper osmotic pressure. On the one hand they are unable to absorb oxygen through such an envelope, and hence one organ, the gills, has developed permeability for this purpose while the remainder of the surface is provided with a waterproof cuticle of chitin, or, in some cases, of slime, as in the eel; on the other hand the renal glomeruli have been evolved as a rapid and powerful water-excreting device. In land animals the danger of water shortage has necessitated a check to the enormous flow of dilute urine, and for these purposes a reabsorptive mechanism, the loops of Henle, have been added to their renal outfit; a waterproof cuticle of keratin which prevents evaporation has also been evolved by the skin. Still further modifications have been necessitated in warm-blooded animals of constant temperature—for example, mammals and birds. In order to maintain the body heat the skin has been provided with hair or feathers to keep it warm. Man has gone further still. He has shed the protective coat of hair, but his growing intelligence has provided clothes by means of which he has been able to extend his distribution far beyond such warm climates as might be suitable for his nakedness. Sir Walter also drew attention to the special connexion between the skin and the nervous system. It is a commonplace of embryology that the whole of the nervous system and special sense organs are developed from the infolding of the embryonic skin. In order to provide for the guidance of the body the organs of special sense have appeared at its anterior end, while the cells destined to form the central nervous system have retreated to a more protected position while retaining their connexion with the exterior by means of nerve fibres. Thus, as the lecturer put it, it is skin which receives, and modified skin which interprets, the messages we receive from the outside world. He then pointed out that the response of the cutaneous nerves to injury is a very complex matter and referred to Sir Thomas Lewis's valuable work upon the subject. Sir Thomas showed some years ago that there were three components in the local cutaneous reaction to injury: (1) a primary dilatation of capillaries—the red line; (2) an increased permeability of the capillaries producing the wheal; and (3) a widespread dilatation of the surrounding arterioles, the flare apparently produced by a histamine-like substance. More recently he has demonstrated a system of protective cutaneous nerves to which he has given the name "nocifensor", which produces as a delayed effect tenderness not only at the site, but in a more or less widespread area of skin surrounding an injury. Sir Walter Langdon-Brown suggests that "trophic" nerves, the existence of which has been disputed by physiologists for many years, may really be identical with these nocifensor fibres. He also discussed those much vexed questions of allergy and anaphylaxis in relation to the cutaneous phenomena which form their most obvious features. Both allergy and anaphylaxis originated in attempts of the organism to get rid of foreign proteins they are unable to assimilate; this consequently resulted in the production of cutaneous symptoms, which might be a toxic erythema, an urticaria, or even purpura. They might be perhaps explained as attempts to employ the skin as an excretory mechanism, thereby in some degree justifying the popular idea of the benefit derived from "getting the rash out," that old clinical adage whence he had derived the title of his address.

[1] *Brit. J. Derm. Syph.*, 1937, **49**, 347.

ORTHOSTATIC ALBUMINURIA

There is still considerable doubt as to the anatomical basis of orthostatic albuminuria. The condition is usually found in young persons and tends to disappear with increasing years. Its prognosis is said to be good, and it is often assumed that if an albuminuria is found to be of orthostatic type—that is, occurring only when the subject is in the erect posture—it is therefore not due to organic disease. There is some confusion as to what is meant by the term, and some authors include under it other types of functional or benign albuminuria, which are by no means all of the orthostatic type. Two current theories ascribe its causation to circulatory and to mechanical disturbances. The former seeks to explain the albuminuria by changes in the pulse pressure which take place in the standing position and which may act by slowing the rate of glomerular filtration. The latter theory explains the albuminuria as being due to venous compression by lordosis or by compression of the left renal vein between the vertebral column and the aorta, or between the aorta and the superior mesenteric artery. None of these conditions, however, has been proved to exist in all cases of orthostatic albuminuria. For instance, not all the subjects have a low pulse pressure on standing erect, and other patients with low pulse pressures do not necessarily have albuminuria. In orthostatic albuminuria ureteral catheterization has shown that in many cases, but by no means all, the albumin comes from only one kidney. Even in these it is not the left kidney that is always at fault. A new approach to the problem has recently been made by Rytand,[1] who has radiologically examined five patients with orthostatic albuminuria in the recumbent and erect postures after the injection of diodrast. His findings are rather striking, although they still do not reveal any single and constant anomaly which can account for the syndrome. In two patients the left kidney excreted diodrast very poorly and its shadow became larger when

[1] *Arch. intern. Med.*, 1937, **59**, 837, 848.

the subject was erect, suggesting that a congestive change had occurred. In two others there were gross anatomical abnormalities not affected to any degree by posture. One of these was found to have a very small left kidney and a large right one. The concentration of diodrast was about equal on the two sides. The other had a double ureter and renal pelvis on the left side and a very mobile right kidney. Diodrast excretion was delayed in the erect posture on both sides and the concentration was about equal. In the fifth case no significant abnormalities were observed, but there was some enlargement of the kidneys when the patient was standing. The same five patients were further investigated by means of the Addis urea ratio, the Rehberg (creatinin) glomerular filtration rate, and the Addis count of the urinary sediment. The two with unilateral changes related to posture also showed a fall of the urea ratio and glomerular filtration rate in the erect position. In the two with gross anatomical changes the renal function did not vary with position, although in one of them it was below normal throughout. In the fifth case there was a slight impairment of renal function when the patient was standing. In all five, renal epithelial cells and granular and hyaline casts, in addition to the albumin, were found in the "orthostatic" urine. The investigation seems to show that orthostatic albuminuria may be caused by a variety of conditions and that without a complete study of each individual case it is unwise to consider the symptom as being of no prognostic significance.

BERI-BERI HEART

Cardiac lesions which appear to be due to a deficiency of vitamin B_1 are an important cause of disability and death in the Orient, where beri-beri has been common and until recently has had a high mortality. Lately it has been shown that the circulatory symptoms usually respond rapidly to injections of vitamin B_1 in its pure form, and this has also been strikingly demonstrated in animal experiment.[1] The occurrence of identical, or at least similar, conditions in the Occident, generally in association with alcoholic polyneuritis, is suggested by the work of S. Weiss and R. W. Wilkins,[2] who believe that an alcoholic gastritis causes an unbalanced food intake with consequent vitamin deficiency. For a long time the cardiac disturbances, like the nervous symptoms, were thought to be due to a neuritis, in this case involving the vagus, and even the new work does not exclude the possibility that this plays a part. A case of polyneuritis with cardiac failure in a Japanese boy of 15 which was quickly relieved by injections of vitamin B is described by H. Hashimoto,[3] and it illustrates the spectacular effect of treatment on symptoms, on the size of the heart, and on the electrocardiogram. The circulatory symptoms were those of right heart failure—that is, congestion of the veins and oedema—but there was no clinical or radiological evidence of pulmonary congestion. The heart was considerably enlarged, and especially to the left and in the region of the pulmonary artery; the electrocardiogram showed sinus tachycardia and right ventricular predominance (old terminology), with inversion of the T-wave in Lead I. A very large pulse pressure was recorded. Injections of orizanin, a concentrated preparation of vitamin B_1, in doses equivalent to 1 mg. of the crystals daily, cleared up the symptoms at rest within a few days; on the third day the inverted T-wave had become upright and of considerable amplitude, and the pulse rate had fallen to about 70. By the seventh day the *x*-ray appearance of the heart was normal, oedema was absent, and the patient had apparently completely recovered. These remarkable changes are comparable in their rapidity to those observed by Zoll and Weiss in rats, in which after B_1 deprivation an injection of 1/40 mg. of vitamin B_1 abolished abnormalities in the electrocardiogram within twelve hours, including the bradycardia which (instead of the tachycardia occurring in man) results from B_1 avitaminosis in the rat. The functional changes in the heart in vitamin deficiency are of considerable interest not only to workers in the East but also to those who have to treat chronic alcoholism anywhere, for this is sometimes associated with a clinical picture very closely resembling that of beri-beri.

[1] *Proc. Soc. exp. Biol. N.Y.*, 1936, **35**, 259.
[2] *Trans. Ass. Amer. Phys.*, 1936, **51**, 341.
[3] *Amer. Heart J.*, 1937, **13**, 580.

AN AMERICAN CANCER ORGANIZATION

The Chicago Tumor Institute, chartered in Illinois, not for profit, to conduct research on the causes, diagnosis, and treatment of cancer, to instruct and assist physicians, surgeons, clinics, and hospitals in the diagnosis and treatment of cancer, has completed its organization. A Board of Trustees has been set up with Dr. Ludvig Hektoen, director of the John McCormick Institute for Infectious Diseases, Chicago, as its president. The institute will be directed by a scientific committee, consisting of Dr. Max Cutler of Chicago; Dr. Henri Coutard of the Curie Institute, Paris; Sir George Lenthal Cheatle of London; Dr. Arthur H. Compton of Chicago; and Dr. Ludvig Hektoen. Plans have been completed for the remodelling of the building at the south-east corner of Dearborn and Elm Streets, Chicago, to house the activities of the institute, which will begin to function there early in March, 1938. It will be equipped with research laboratories and modern *x*-ray and radium equipment. Sir George Cheatle will spend most of his time in Chicago in laboratory research and in postgraduate instruction. One of the important functions of the institute is to train physicians and surgeons desiring to specialize in the diagnosis and treatment of cancer. Although the scope of the activities of the Chicago Tumor Institute will be national, the contributions to its funds have been made entirely by citizens of Chicago. The two outstanding features of the institute are, first, the assembling of a group of cancer authorities from various medical centres of the world to collaborate in the study of the cancer problem, and, secondly, the formation of an organization devoted exclusively to the study of cancer.

MANCHESTER ROYAL INFIRMARY

OPENING OF HOME FOR PAYING PATIENTS

On November 15 Lord Dawson of Penn opened the new paying patients' home of the Manchester Royal Infirmary, Lord Derby, the president of the Infirmary, presiding over a company of about 700 guests.

The home has been built on the site of the old Christie Hospital, originally a private house standing in a large garden and situated on the eastern side of the Infirmary. The building is planned roughly in the shape of the letter Y, so that the rooms may receive the maximum amount of sun and air; they look on to the garden enclosing the building, and are fitted with those modern appliances which make for comfort, noiselessness, and efficiency. The leg of the Y contains on the various floors the administration section, kitchens, *x*-ray department, and operating theatres. The building will accommodate 100 patients and has cost £100,000, towards which the Royal Infirmary Board has received donations amounting to £20,000.

In his speech Lord Dawson expressed his pleasure at coming again to Manchester and to the Royal Infirmary, which he looked upon as one of the outstanding institutions of its kind in the country. The art of medicine, he said, required more technical equipment than in the simple days of the past. The advancing sciences of bacteriology, radiology, and biochemistry could only be served economically and efficiently by such an equipment as could be brought together in a building of this type—at a cost. As an instance of the increased cost of equipment Lord Dawson pointed out that in 1910 a hospital of, say, 500 beds could install an *x*-ray outfit for about £500, in 1920 for £3,000, and in 1935 for about £12,000; that alone illustrated how necessary it was to get people round the equipment rather than to carry the equipment to the people. In the future institutional treatment would become more and more necessary for serious illness. There was also the obvious advantage of being able to marshal all the facts of an illness and the means of its treatment within one building. Lancashire, he added, had early learned the value of team work under the inspiring leadership of Sir Robert Jones. The fine building which he had the privilege of opening was but a branch of that bigger institution, the Royal Infirmary; but it should be made plain that in all essentials there would be no difference in the treatment and care as between this block and the parent hospital. "For us doctors it is a pride that we belong to a republic of healing—and this bringing of all classes under the roof of the same institution is a milestone of social progress."

A large part of the accommodation which they would see would be occupied with developed and severe illness, but it would also play an important part in the field of preventive medicine. In these days of stress, Lord Dawson continued, there was in the community a large number of functional disorders, distempers, and distresses of body and mind, which were more difficult to unravel than fully developed illness; what was needed for the treatment of such patients was a recuperative hospital or sanatorium, situated in the country within easy reach of the borders of the city, where a regime could be enforced, where right dietaries could be devised, and games, recreation, and remedial exercises be provided. He would like to think that Manchester would in due course lead the way in such a venture.

Lord Dawson then briefly reviewed the evolution of the public health services of the country during the present century. Referring to the recent development of the municipal hospital services, he said that these for the most part were administered by whole-time doctors, and in this he saw a possibility of serious danger in that the ordinary medical men of the community and the smaller group concerned with these public services were steadily diverging in their lines of work. It was a serious thing for a community to have the doctors of the district divided into two such groups with no adequate connexion between the two. Manchester, however, had been foremost in trying to bridge these difficulties, and, largely owing to the initiative of the medical officer of health, Dr. Veitch Clark, a joint hospital board had evolved a system of co-ordination between the two sets of hospitals, voluntary and municipal.

"But it is by no means the case that such advantages have been secured in other parts of the country. All over the country you have these two divergent streams of medical work—a smaller number of whole-time people who are responsible for the municipal side of the work and a larger group responsible for the health of the citizens—and there is no bridge connecting these two. And, alas! I think the divergence increases rather than diminishes. There is no organization or arrangement in most parts of this country by which the best medical brains can as a matter of routine be brought periodically and with advantage to the assistance of the local authority's medical officer of health."

Vote of Thanks

In moving a vote of thanks to Lord Dawson, Professor J. S. B. Stopford surveyed the changes that had taken place at the Infirmary since King Edward VII opened it twenty-eight years ago. These included a greatly enlarged and modern radiological department, the nurses' home in York Place, the electrocardiographic department, the school for massage, new research laboratories, a dietetic kitchen, and shortly there would be added a new orthopaedic department. He would like, he said, to acknowledge the enterprise, progressive policy, and courage of the Board of the Infirmary, who, once convinced of the need for these things, did not hesitate to provide them. Seconding the vote, Professor John Morley said that to those who hoped to work within the home the day was the accomplishment of a long-cherished ideal. He did not decry the old nursing homes, but while what they had done should be gratefully acknowledged, the plain fact was that modern surgery and a great deal of modern medicine could not obtain what it required within the limits of the adapted Victorian villa.

Mr. Walter Cobbett, seconded by Mr. James Watts, proposed a vote of thanks to the president of the Infirmary, Lord Derby, and in response Lord Derby expressed his personal gratitude to Lord Dawson for the service he had rendered to Manchester and Lancashire that day; he assured him that at Cheadle the Royal Infirmary had such a convalescent home as he had described. Lord Derby expressed his pleasure that reference had been made to the work of Sir Robert Jones, a man particularly dear to him, and to whom, only three weeks ago, he had unveiled a worthy memorial in his own city of Liverpool.

E. Huizinga (*Nederl. Tijdschr. Geneesk.*, August 7, 1937) has studied bronchographically the physiology of the bronchial tree. He found that the trachea and peripheral air passages might show extensive movement. On inspiration the bronchi spread out, and on intense diaphragmatic inspiration the angle between them became smaller. On deep inspiration their length showed considerable variation even in adults. In the smaller bronchi these variations were so considerable—their diameter increasing two- or three-fold during inspiration—that an exploration presented great difficulties. These changes in diameter are present even when differences of pressure are of no significance, the lumen varying with the lung volume. The author believes that this must have an important bearing on expectoration.

THE STATE OF THE PUBLIC HEALTH

SIR ARTHUR MACNALTY'S REPORT

The eighteenth annual report of the Chief Medical Officer of the Ministry of Health—the third to appear above the signature of Sir Arthur MacNalty—covers the year 1936 and has been published this week.[1]

The report, appearing in a year of Coronation which is also the centenary year of Queen Victoria's Coronation, gives occasion for an introductory review of the progress made in national health and medicine during the past hundred years. This review, after tracing the advances in various directions, ends on an optimistic note: "One cannot but feel pride in this hundred years' review of preventive medicine. So much has been gained; so much health, vitality, and happiness have replaced destitution, ignorance, and despair."

Births and Deaths in 1936

In the year under review there was a rise of 6,536 births over the number registered in 1935, representing a birth rate of 14.8 per 1,000 living, which, though a slight improvement on the rate of 14.7 for 1935, only just equals that for 1934. It is 0.4 above the rate for 1933, which was the lowest recorded. The infant mortality rate is 59 per 1,000 births, which is the same as that recorded in 1934. In 1935 this rate reached the exceptionally low figure of 57. The deaths in 1936 were 495,764, as compared with 477,401 in 1935, an increase of 18,363, chiefly brought about by the increased prevalence of influenza. The five principal killing diseases remain the same as for many years past, and occur in the same order:

(1) Diseases of the heart and circulatory system;
(2) Cancer—Malignant disease;
(3) Bronchitis, pneumonia, and other respiratory diseases;
(4) Diseases of the nervous system;
(5) All forms of tuberculosis.

If, however, the causes are set out in order of magnitude for the ages 15–65—the years of working life—tuberculosis takes third place instead of fifth, the fifth place being occupied by diseases of the nervous system. Other interesting points noted are: (1) the proportion of deaths from heart and circulatory system diseases has steadily risen during the past five years; (2) during the same period the proportion of tuberculosis deaths has slowly but steadily fallen; (3) the cancer mortality has on the whole risen during these five years though the rise has not been a steady one; and (4) there is no great difference between the proportions for nervous diseases and respiratory diseases five years ago and at the present time.

Epidemic Diseases

On a general review, there has been a decline in the incidence of diphtheria, encephalitis lethargica, poliomyelitis, and scarlet fever, and the continued decline in respect of tuberculosis has been maintained. On the other hand, there has been a notable rise both in the incidence of and the number of deaths due to enteric fever, an increase for which the serious outbreak in Bournemouth, Christchurch, and Poole during the summer of 1936 is mainly responsible. In respect of these and other infectious diseases further details are as follows:

Scarlet Fever and other Streptococcal Infections.—In 1936 there were 104,862 notifications of scarlet fever with 495 deaths, as against 120,456 notifications and 573 deaths in 1935.

Diphtheria.—57,795 cases of diphtheria were notified in 1936 with 3,081 deaths—a fatality rate of 5.3 per cent.—as compared with 65,084 cases in 1935 and a fatality rate of 5.4 per cent.

Enteric Fever.—During the year there were (including paratyphoid fever) 2,490 notifications with 257 deaths—a mortality of approximately 10 per cent. For 1935 the corresponding figures were 1,750 with 174 deaths. Both environmental and personal hygiene are essential in the prevention of this group of fevers, and the caution is also given that all admissions to hospital suffering from a pyrexia of unknown origin should be treated as potentially dangerous until the diagnosis is certain.

Influenza.—At the end of December, 1936, there was a large increase in the number of influenza deaths in the 122 great towns of England and Wales. The peak of the epidemic for England and Wales occurred in the fourth week of January, 1937, with 1,155 deaths, which was a fortnight later than the maximum in London. The epidemic ranks as fifth in order of severity of the death roll since 1920. Reports indicate, however, that the type of the disease was not severe and that the number of deaths was due to excessive prevalence and not to any increase of virulence.

Other Epidemic Diseases.—In 1936 there were 12 cases of small-pox—all variola major—but no deaths. The notifications for the three preceding years were 631, 179, and 1 respectively. Five cases of post-vaccinal encephalitis were reported in 1936. The number of cases of dysentery notified during the year was 1,333. It is pointed out that many cases of bacillary dysentery in this country escape notice, but since a warning was issued the number of notifications has greatly increased and the figure for 1936 probably represents a truer approximation to the real prevalence of the disease than heretofore. A brief reference is made to Weil's disease, or icterohaemorrhagic jaundice, which is primarily contracted through the medium of rats. The slight rise in incidence of poliomyelitis mentioned in 1935 proved, as was anticipated, to be of no significance, the notifications in 1936 falling to the lowest recorded in the past ten years. The notifications of encephalitis lethargica continue to fall; the deaths due to the aftermath of previous epidemic years now largely exceed the notifications. The notifications of cerebrospinal fever are somewhat higher than in 1935, but there appears to be no reason to assume that a new high incidence is likely to occur immediately. No human case of psittacosis was reported during the year. One case of malaria contracted in this country occurred during 1936, the person affected belonging to the same family as that in which two cases were reported last year.

The section on epidemic diseases ends with a detailed account of outbreaks of enteric fever, enteritis, and scarlet fever occurring respectively in Bournemouth and Poole, Wilton and Doncaster, in which the vehicle of infection was raw milk.

Maternity and Child Welfare

The maternal death rate per 1,000 total births for the year 1936 again shows a slight reduction, being 3.65 as against 3.94 for 1935 and 4.41 for 1934. Puerperal sepsis accounted for 1.34 per 1,000, leaving 2.31 for other causes. A summary is given of the report of a special investigation into maternal mortality in England conducted by medical officers of the Ministry and of confidential reports on individual maternal deaths. A section of the former report is devoted to the subject of abortion, which appears to be frequent and increasing and to be responsible for a number of deaths from puerperal sepsis. An Interdepartmental Committee appointed by the Minister and the Home Secretary is inquiring into the matter. The claim of 1936 to be a memorable year in the history of the maternity services in this country will rest mainly on the passing into law of the Midwives Act, which places on local supervising authorities under the Act the duty of establishing and maintaining a domiciliary service of salaried midwives. An account of the progress of schemes under this Act is given.

The Insurance Medical Service

In 1936 the number of insured persons entitled to medical benefit in England and Wales was 16,320,000 and

[1] *On the State of the Public Health.* Annual Report of the Chief Medical Officer of the Ministry of Health for 1936. H.M. Stationery Office. (4s. net.)

the number of insurance practitioners was 16,750—increases of 451,000 and 150 respectively on the previous year. The total cost of medical benefit, exclusive of administration costs, was £9,999,000, of which £7,594,000 represented the doctors' remuneration and £2,405,000 the cost of medicines and appliances. The sum of £3,300,000 was allocated from the disposable surpluses of approved societies for additional treatment benefits, of which the most important are dental and ophthalmic benefits.

(To be concluded)

ROYAL SOCIETY OF MEDICINE

CHANCELLOR OF EXCHEQUER AT BIENNIAL DINNER

The biennial dinner of the Royal Society of Medicine was held at the May Fair Hotel on November 10. Sir John Parsons presided, and the principal guests were Sir John Simon, the Chancellor of the Exchequer, and Mr. Walter Elliot, Secretary of State for Scotland, together with a number of representatives of sister societies and of the Services, whose names were mentioned in Sir Alfred Webb-Johnson's speech proposing the health of the visitors.

Sir John Simon on Specialization

Sir JOHN SIMON, in proposing the health of the Society, began with a tribute to Mr. Ramsay MacDonald, whose death had been announced that morning. He recalled one Cabinet meeting when Mr. MacDonald had conducted the business with unremitting attention for a couple of hours, and then, without previous warning or wincing, had quietly taken his leave as the time came for him to be prepared for an operation.

Sir John went on to make some comparisons between political and professional life—the cheerful breadth of view usually expected from a politician and the increasing specialization of a great profession. When a man was a public figure in Parliament he was presumed to be prepared to take any office of State at the shortest possible notice and to be able to explain the policy of his new department without any previous training. This was not as great a miracle nor as great a sham as it might appear, for the Minister had always at call the well-informed members of the permanent service who prepared his impromptus and warned him against pitfalls. Moreover, a very large part of the work of the politician could not by any stretch of imagination be regarded as the application of a strict system of science to the problem, but only as an application of common sense.

The politician and the professional man did their work in very different environments. The days were long past when the medical man had to consider how the relatives of the patient would regard the specific he proposed to employ. He had always envied the surgeon the manner in which he could turn the relatives out of the room, and, thus having guarded himself against their ignorant and irrelevant interventions, proceed with the business of giving the anaesthetic to the patient and performing the operation. Such were not the conditions which the politician had to face in a democratic assembly. The Minister might be in charge of a policy in which secrecy, or at any rate discretion, was essential to success, and yet he had to work in a constant atmosphere of often uninformed criticism. Sir John Simon commented on the intense specialization of medicine. He could not help wondering whether it really divided the scientific mind into separate watertight compartments, or whether there was an underlying unity of understanding which knit together these apparently highly technical and specialized developments. The extent to which, as indicated by the number of its Sections, the Royal Society of Medicine was divided was something which the layman could not possibly appreciate. But he knew that the Society existed largely for the purpose of gathering together in a common organization these innumerable branches and subdivisions, and afforded facilities for interchange of experience and joint discussion, and therefore it gave him special satisfaction to propose its health.

Sir JOHN PARSONS, in responding, referred to the *esprit de corps* of the Fellows of the Society, the effective supervision of the Council, and the efficiency of the officers and staff. The object of the Society and of medicine in general was to bring about the prevention and cure of disease. The more successful medical men were in achieving their objective the more impecunious they became. The vast majority of medical men were in fact impecunious. "You might gather from current literature that there are many medical men who have successfully stormed the citadel of wealth; but they are extremely few and far between, and we who do not come into that category regard those who do as being renegades and traitors to the Hippocratic oath or as having given up medicine and taken up that form of literature which is quite rightly called fiction."

Sir ALFRED WEBB-JOHNSON, in proposing the health of the guests, first welcomed the newly elected Honorary Fellows—Sir Frederick Hobday, Sir Robert Muir, and Mr. Royal Whitman. The presidents of other medical societies were also welcomed—the Medical Society of London, the Chelsea Clinical Society, the Harveian Society, and the Royal Society of Tropical Medicine and Hygiene. He mentioned with special pleasure the presence of Mr. Justice Humphreys, president of the Medico-Legal Society; also the Master of the Society of Apothecaries, Mr. Hugh Lett, the president of the British College of Obstetrics and Gynaecology, Sir Ewen Maclean, and the president of the British Medical Association, Professor R. J. Johnstone. Other guests whom the Society was very glad to see at its table were the representatives of the medical services of the defence forces (Surgeon Vice-Admiral P. T. Nicholls, Lieut.-General Sir James Hartigan, and Air Vice-Marshal Sir Alfred W. Iredell), Sir Arthur MacNalty, Chief Medical Officer of the Ministry of Health, and Sir Frederick Kaye Menzies, Medical Officer of Health, London County Council, also the Editors of the *Lancet* and the *British Medical Journal* (Dr. E. C. Morland and Dr. N. G. Horner). Sir Alfred Webb-Johnson went on to remark that both Sir John Simon and Mr. Elliot had been at Scottish schools. Mr. Elliot might have been a Fellow of the Society, but he had chosen to serve his country in the political field. Perhaps there was need for more medical men in the affairs of State. Medicine was the most comprehensive of all the sciences concerning man, and the purpose of civilization was not the development of science but human betterment.

The Amateur in Government

Mr. WALTER ELLIOT began with a reference to his fellow guest Sir Robert Muir. He himself was a graduate of the Scottish University (Glasgow)—the redoubtable university which produced James Maxton, Lord Horne, and Dr. A. J. Cronin—which was the scene for many years of the life and work of "Bobby" Muir. He could not help in such a company casting his mind back to those days when he was a careless undergraduate and later to the days when he paced the ill-lit corridors of the hospitals and learned to love, respect, and honour the great craft of medicine and all who practised it. His distinguished colleague Sir John Simon, in the polished speech he had just made, revealed in some respects how widely the popular conception of medicine varied from the truth. He had noticed with horror that apparently Sir John Simon supposed that the surgeon, having first turned the relatives out of the room, proceeded himself to give the anaesthetic and then perform the operation! No doubt before performing the operation he whetted his knife on the sole of his boot, and, in the words of an American student, "cut right down through all the Latin names until he got to the gut itself"!

He (Mr. Elliot) spoke that night as one who had deserted the halls of learning, who had cast aside the habit of specialized thought and entered into that wide field so deeply respected by Englishmen, and indeed by all the inhabitants of the United Kingdom—that of the amateur. By tradition in this country the Government was carried on by amateurs; whether a right tradition or not, it was one to which the people were deeply wedded. Seldom was a distinguished doctor Minister of Health, or a distinguished soldier Minister of War; never was a distinguished admiral First Lord of the Admiralty. It was believed that every head of a department should be liable to be called to account by those below him who knew a great deal more than he did himself. There was deep aversion from anything in the nature of a totalitarian State, a framework in which one at the top gave orders and all beneath had to obey. By long tradition this country preferred a form of government in which the challenger had frequently the opportunity of coming to the top and himself exercising the functions of those he had challenged. But he would be the last to suggest that this system could be applied in the practice of medicine. Positions in the Government were precarious, and even seats in Parliament were not secure, and for his own part he did not know whether he might not yet "have to earn an honest living by listening for the tinkle of the night bell." At all events it was a very great pleasure to him to have recaptured for a time the old and still welcome atmosphere of medicine.

THE QUEEN AT ST. MARY'S

OPENING OF PRIVATE PATIENTS' WING

A new private patients' wing was opened at St. Mary's Hospital, Paddington, by Her Majesty the Queen on November 10. The wing, which has been built at a cost of £80,000, contains sixty-six bedrooms, most of them for patients of moderate means, with two operating theatres and a well-equipped diagnostic *x*-ray room, together with all the services of a modern general hospital. The Queen was received by Lieutenant-Colonel Verey, chairman of the Board of Management, Dr. C. M. Wilson, dean of the Medical School, and Sir Edwin Cooper, the architect. A number of presentations were made, including Dr. Reginald Miller, senior physician, Mr. Duncan Fitzwilliams, senior surgeon, Lieutenant-Colonel Parkes, house governor, and Miss Salton, matron. Colonel Verey stated that the wing had been made possible by the generosity of an anonymous donor, whose gifts for the extension of the hospital now amounted to over £115,000. Only that morning a sum of £5,000 had been received from him to cover the balance of equipment and to enable the new wing to be opened free from debt. He also directed attention to two other important extensions of the hospital—namely, the Meyerstein dental research laboratory and the Lewis Carroll memorial ward for children. There still remained the completion of the new nurses' home, the provision of a new *x*-ray department, and the arrangement of better accommodation and facilities for the fracture clinic inaugurated eighteen months ago.

The Queen, in performing the ceremony, said that this further extension of the hospital's activities could not fail to be of lasting benefit to the community it served. As president of the hospital she expressed gratitude to the anonymous donor, and said that she would continue to watch with close interest and keen sympathy the progress of St. Mary's. Her Majesty afterwards unveiled a memorial tablet in the entrance hall of the wing to the anonymous benefactor.

The Significance of Pay-bed Wards

In thanking the Queen the dean of the Medical School (Dr. C. M. Wilson) said that the first purpose of a teaching hospital was to set up standards of doctoring and nursing for the whole country. They had to demand of each new procedure whether it contributed to that end. When that criterion was applied to the pay-bed wing it was evident that it provided an opportunity for bringing the doctor who had gone out into practice back to his own hospital, there to play his part in the diagnosis and treatment of disease under the conditions which only a teaching hospital can provide. (A part of the provision is that general practitioners may visit, professionally, their patients in the private wing, to collaborate in their treatment.) The secret of a doctor's efficiency (Dr. Wilson continued) was that he should work under conditions where he could learn at every step whether he was right or wrong. Criticism was the rock on which all medical efficiency was built, and a teaching hospital was "one vast inquisition for the ferreting out of mistakes." It was difficult to see how anyone could retain an exaggerated sense of his own importance in such an atmosphere, yet man was a resilient creature. Not all medical virtue was segregated within the walls of teaching hospitals. Perhaps there was no immediate danger of their losing their heads while the public continued to measure the physician's intelligence by the street in which he lived, but it was certain that whereas at the present time only a privileged few had the opportunity of working under hospital conditions, eventually the whole profession would be able to look after their own patients in hospital when they were really ill. That would be a reformation in the conditions of medical practice in this country, and it was those conditions which ultimately determined the efficiency of the medical profession. That was the significance of pay-bed wings rather than that they extended hospital benefits to persons of moderate means. Doctors would always prefer to treat their patients in such wings instead of in nursing homes, because they found there the authentic atmosphere of a great hospital with its passion for proof and exactitude, and because they were working in a building where tradition, in the English way, stirred and kindled afresh the spirit of service.

At the close of the ceremony the Queen was conducted over the new wing, and also visited the Lewis Carroll memorial ward, which has just been opened and contains twenty-six cots.

It was mentioned that in the new private patients' wing the charges in fifty-six of the rooms are seven guineas a week for patients unable to pay full professional fees, and in the other ten rooms, for patients able to pay full fees, twelve guineas a week. These charges entitle the patients to accommodation, board, nursing, ordinary medicines, preparations, and surgical dressings, and the use of the operating theatres. The total professional fees for patients occupying the seven-guinea rooms will in no case exceed 50 guineas, the inclusive fee to be arranged with the physician or surgeon under whose care the patient is admitted. The medical and surgical fees payable by patients in the twelve-guinea rooms will be a matter of personal arrangement in each case. The fees in respect of professional visits by general practitioners are also a matter of arrangement; they are not included in the hospital account nor in the maximum professional fee of 50 guineas above mentioned.

At the November meeting of the Central Midwives Board for England and Wales intimation was received from the Secretary of the Ministry of Health that Mr. A. B. Maclachlan had resigned his membership of the Board in consequence of his retirement from the Civil Service and that the Minister had appointed in his place Mr. H. A. de Montmorency for the period expiring on March 31, 1938. The Secretary reported that the Minister of Health had made orders applying the provisions of Section 6 to the areas of local supervising authorities, as follows: County Borough of Doncaster and County Borough of Stockport, from December 1, 1937; County of Somerset, from January 1, 1938.

BRITISH HEALTH RESORTS ASSOCIATION

A Review of Progress

The annual general meeting of the British Health Resorts Association was held on November 12 at the house of the Royal Institute of Public Health and Hygiene. Lord MESTON, president of the association, who took the chair, said that the year had been one of somewhat slow but on the whole steady progress. The appreciable return of prosperity to this country had brought in its train some revival of cross-Channel holiday-making and of visits for treatment to foreign spas. The British Health Resorts Association did not regard this tendency with disfavour because it anticipated that with happier international relations and a better state of exchange reciprocity in this respect must increase, and indeed there had been a greater number of visitors from abroad to the places of health and pleasure in this country. A number of important developments were taking place or projected at British spas and health resorts. Bath had its new gallery and sun promenade, and would shortly have its new national hospital for rheumatic patients. Cheltenham had in hand a complete spa building, while Llandrindod Wells had acquired land for the preservation of its amenities. At Harrogate the foundation stone had been laid of a building for spa extension, and various improvements were taking place at Buxton, Leamington, and Woodhall Spa. Among seaside resorts Bournemouth was building new medical baths, and new baths or swimming pools had been opened or planned at Blackpool, Scarborough, and Morecambe, while Brighton and Margate were devoting special attention to town planning and the preservation of countryside amenities.

Lord Meston drew special attention to the official handbook, *British Health Resorts*, for which the association is responsible, and expressed gratitude to Dr. Fortescue Fox, its editor. During 1938 at least 10,000 copies of this handbook would be distributed to members of the medical profession, and it was hoped ultimately, with the help of local authorities and others, to have a copy of it on the table of every practising doctor in the kingdom. Lord Meston concluded by expressing thanks for the financial support which the British Health Resorts Association had received from about twenty-six health resorts and from the British Spas Federation. The chairman of the federation was *ex officio* a member of the association's council. He also thanked Colonel W. Byam, the chairman of the council, and Dr. Alfred Cox, the general secretary, and spoke of the very large amount of useful and encouraging work that had been done on an expenditure of less than £700. The work had included the holding of two conferences during the year, at Bournemouth in March and at Skegness in April, both of which were very successful. As a result of one of the Bournemouth discussions it was probable that an attempt would be made to inaugurate definite scientific research work on the curative action of sea climate at one of the seaside resorts.

Brief remarks in support of the objects of the British Health Resorts Association were made by Dr. Geoffrey Holmes of Harrogate, Sir Stanley Woodwark, Alderman Bright of Bournemouth, and Dr. Fortescue Fox. The last-named mentioned that in the 1937 edition of the *Handbook* emphasis was laid on the value of the winter climates of the British coast. The collaboration of the meteorologists had been particularly useful.

The annual report and financial statement were adopted. Lord Meston was re-elected president, and Sir Walter Langdon-Brown, Lord Horder, Sir Archibald Weigall, Sir Stanley Woodwark, and Lady Honywood were elected vice-presidents. The council also, with a few changes, was re-elected, and on the motion of Dr. de Bec Turtle, seconded by Dr. Howard Humphris, a vote of thanks was accorded to the president.

POSTURE, USE, AND FUNCTIONING

On May 29, 1937, a letter headed "Constructive Conscious Control" appeared in the *British Medical Journal*, signed by nineteen medical practitioners who had been impressed by the beneficial changes in use and functioning brought about by the employment of the technique of Mr. F. Mathias Alexander in patients they had sent to him for help. They urged that early steps should be taken for an investigation of Alexander's work and technique, believing that "diagnosis of a patient's troubles must remain incomplete unless the medical man when making the diagnosis takes into consideration the influence of use upon functioning." Some twelve months earlier one of the signatories to this letter, Dr. A. Murdoch of Bexhill-on-Sea, used the occasion of his presidential address to the Sussex Branch of the British Medical Association to refer to Alexander's work, and he has now published the substance of this in pamphlet form under the heading "The Function of the Sub-occipital Muscles: the Key to Posture, Use and Functioning." The following two passages from Dr. Murdoch's paper may be quoted in full:

"The important principles which Alexander discovered were not only that the position of the head relative to the spine conditioned the co-ordinations of the rest of the body, but that the most advantageous relative position of the head to the spine was when it was being directed forwards and upwards. The use and direction of the head he called 'the primary control,' but experiments on animals have failed to establish that this constitutes Nature's primary control, because the mechanism controlling it (the sub-occipital muscular system) has never been the subject of experiment. The fact that the cranial globe has an independent movement of a limited extent at the atlanto-occipital joint has been ignored, but as in other mechanisms it is the small primary movement before succeeding larger ones which initiates and conditions the other movements, so it is here."

"Alexander was by profession an elocutionist whose voice was always failing him. In his search to find out why, and prevent it happening, he found that just as there had been no cure from specific medical treatment, so there was no cure from specific treatment directed to his manner of using his voice. He was forced to realize that the specific bad use of his vocal organs was part of and accompanied by an unsatisfactory and bad use of himself generally. He, therefore, patiently set himself to correct and overcome this, and thereby eventually established a more reliable general use and one which he found was accompanied by a more reliable specific use of his vocal organs. As regards evidence of his general bad use it will be sufficient to mention here that when he began to recite he found that his head was drawn backwards and downwards, that his chest and shoulders were raised, his larynx became depressed, his breathing became noisy and laboured, and that his stature was shortened, and that there was an increasing hoarseness of his voice. He endeavoured to find out which of these happenings was primary and found that it was the position of the head that conditioned all the rest, and if he could direct his head in a forward and upward direction and keep that direction in being, a new 'use' and better functioning began to appear. As a result of this new direction he found after a time that his stature lengthened, that his chest and shoulders were no longer raised or his larynx depressed, that his manner of breathing was changed and that his hoarseness had disappeared, and with it the physical signs of chronic inflammation of the vocal cords. Experiments on himself and observations on other people showed Alexander that this position of the head backwards and downwards relative to the spine was practically universal, and that it became exaggerated whenever any effort was made in doing work or indulging in any exercise. It is the central fact in man's maladjustment."

R. L. Pfeiffer (*Arch. Ophthal.*, Chicago, July, 1937) reports one case in which a local infiltration with 0.5 per cent. pantocaine caused excessive oedema of the lids and face, chemosis, oedema of the corneal epithelium, and intense itching; the condition lasted ten days. It is possible that subcutaneous or intraspinal injection of the drug in such a case might prove lethal. Similar hypersensitivity has been recorded by several observers in Germany.

FELLOWSHIPS FOR CANCER RESEARCH

The will of the late Dr. George Walker of Baltimore provided for the formation of a corporation to be known as the Finney-Howell Research Foundation, the purpose of which was to be the support of "research work into the cause or causes and the treatment of cancer." The will directed that the surplus income from the assets of the Foundation together with the principal sum should be expended within a period of ten years to support a number of fellowships in cancer research, each with an annual stipend of two thousand dollars, "in such universities, laboratories, or other institutions, wherever situated, as may be approved by the Board of Directors." In accordance with Dr. Walker's wishes the Finney-Howell Research Foundation has been incorporated under the laws of the State of Maryland, and the Board of Directors announce that they are prepared to award fellowships under the following regulations:

1. Fellowships carrying an annual stipend of 2,000 dollars will be awarded each year at the annual meeting of the Board on the second Wednesday of March, beginning March, 1938. These fellowships will be awarded for a period of one year with the possibility of renewal up to three years.

2. When deemed necessary by the Board special grants of limited sums may be made to support the work carried on under a fellowship.

3. Applications must be on file at the office of the secretary of the Foundation, Dr. William A. Fisher, Medical and Chirurgical Faculty Building, 1211, Cathedral Street, Baltimore, Maryland, on or before February 1.

4. Applications should be made upon blank forms, which will be furnished by the Secretary.

5. It is expected that at the end of his tenure each Fellow will submit to the Board a summary of the results of his investigations.

TREACHER COLLINS PRIZE

Under the above title the Council of the Ophthalmological Society of the United Kingdom has instituted a prize of £100 awarded triennially for the best essay submitted upon a subject selected by the council.

The prize is open to qualified medical practitioners of any nationality, but the essay must be written in the English language. The subject for the first award of the prize is "Cerebrospinal Disease and its Relation to the Optic Nerve."

The closing date for sending in essays for the first award is December 31, 1938. They should be submitted to the honorary secretary, Ophthalmological Society of the United Kingdom, 5, Racquet Court, Fleet Street, E.C.4, from whom also any further particulars can be obtained. No name should be upon any essay, but a distinguishing pseudonym or quotation, which should also be upon a sealed envelope containing the candidate's name and address. This envelope should accompany the essay.

A meeting of the British Red Cross Society was held on November 10 at 14, Grosvenor Crescent, S.W.1. The Hon. Sir Arthur Stanley, chairman of the executive committee, reporting the Society's contribution to the work of the International Red Cross Committee in Spain, said that the Director-General (Sir Harold Fawcus) on his recent visit to Geneva had been much impressed by the excellent organization and work of the International Red Cross in Spain. With regard to the Society's co-operation with the China Association and the conference of British missionary societies for the relief of distress in China, Sir Arthur stated that the result of the Lord Mayor of London's appeal to date was about £70,000 as well as contributions in kind: £15,000 in cash had been remitted to the Ambassador's Committee in China and £20,000 spent on drugs, instruments, etc., and £2,000 allocated for purchase of blankets, clothing, etc. Premises in London had been placed at the disposal of the Fund, rent free, for use by its committees and subcommittees.

Reports of Societies

VASOMOTOR RHINITIS

At a meeting of the Section of Laryngology of the Royal Society of Medicine on November 5 there was a brief discussion on vasomotor rhinitis.

Dr. E. SCHMIEGELOW of Copenhagen said that this condition varied greatly in intensity, sometimes manifesting itself in a few brief attacks of convulsive sneezing, and at other times in attacks lasting a day or longer. Even though there was reason to ascribe the disease to allergic substances, the problem was by no means solved, and a clear understanding of the physiological condition had yet to be reached. Unfortunately it was only in very rare cases that the specific allergen could be demonstrated. In all probability it was something inhaled, and such substances were not likely to produce a specific skin reaction. The development of vasomotor rhinitis required not only a specific allergic substance in contact with the nasal mucosa, but also a particular character of mucous membrane. Most likely the allergic substances were always present in the surrounding atmosphere, with certain seasonal variations. The sensitiveness of the mucosa might be congenital, for patients were met with who had been suffering from rhinitis all their lives, though in others the condition made its first appearance in adult life following an attack of influenza or tonsillitis. Dr. Schmiegelow described a form of treatment which he had tried of late years and which had yielded favourable results. This was electrocoagulation, under local anaesthesia, of the nasal mucosa by means of a flat electrode applied in the nasal cavity between the inferior turbinate bones and the septum.

Mr. HERBERT TILLEY said that the allergen to which one patient was sensitive might be quite different from that which affected another. Perhaps the symptoms of paroxysmal rhinitis could be better envisaged if it was borne in mind that whatever might be the allergic factor it affected the nerve supply of the nasal mucous membrane. With regard to treatment, obviously the first duty was to discover the allergic factor, and patients of average intelligence might give valuable hints. The question was whether the substance was air-borne or entered the circulation by way of the gastro-intestinal tract. A few instances had been recorded in which the stimulus was of psychical origin, and this was the more intelligible if the effect of sudden fear or anxiety on the secretion of the suprarenal gland was remembered. It was his experience that these nasal symptoms were much more frequent in the female, and that their prevalence had increased during recent years with the vogue of face powder. When not able to identify the allergen he found benefit from administering calcium lactate and parathyroid gland, a combination which could be given in compressed form. Surgery should be limited to the removal of anatomical irregularities or pathological hypertrophies which caused obstruction and increased the symptoms.

In the course of further discussion Mr. FRANK COKE said that the discovery of the antigen to which a person was sensitive was not difficult at all. These patients, like asthmatics, reacted very easily to the reagents when used intradermally. Bacterial invasion should not be overlooked, and a post-nasal swab should always be taken to see what bacteria there were in the nose. Mr. THACKER NEVILLE remarked on the possible value of injections of histidine. Dr. SCHMIEGELOW said that he had not put forward the operation of electrocoagulation as suitable for every case, but he had performed it more than fifty times with good results, and the patients had suffered no pain, nor was there any febrile reaction.

Chronic Sinus Infection

At the same meeting Mr. BEDFORD RUSSELL read a paper on the operative treatment of chronic sinus infection, in which he described in detail, with the help of lantern slides, the cavitation operation. He also showed ten cases, the majority of which had been the subject of transantral operation or drainage of the sphenoids and removal of turbinates, with general improvement of symptoms. Points from the paper were his emphasis on the importance of imprisoned oedema in an inelastic cavity in the production and continuance of chronic sinusitis, the relative unimportance of the presence of pus in diagnosis, the desirability of avoiding the stigma attaching to multiple partial operations, and the bogy of atrophic rhinitis after inferior turbinectomy.

SULPHANILAMIDE TREATMENT OF GONORRHOEA

At a meeting of the Medical Society for the Study of Venereal Diseases, on October 29, the president, Dr. H. M. HANSCHELL, gave an address on clinical observations on the treatment of gonorrhoea in the male with sulphanilamide.

Dr. Hanschell said that at the clinic at the Royal Albert Dock Hospital out-patient cases of urethritis in the male had been treated with prontosil. All these cases were of untreated first infections in which the gonococcus was demonstrable; they were observed and examined for two weeks after the complete cessation of treatment. Thirty of the men received 2 grammes of prontosil album by the mouth daily, in four doses, for six days a week, and on five days a week anterior and posterior urethral lavage was carried out with potassium permanganate, 1 in 15,000 solution; the period of treatment varied from two to six weeks. Thirty-nine cases were given 3 grammes of prontosil album by the mouth daily, in three doses, on six days a week, and on three days a week an intravenous injection of 5 c.cm. of 2½ per cent. prontosil soluble, followed by an anterior and posterior urethral lavage with potassium permanganate solution. In this second group the period of treatment varied from ten days to three weeks. In both groups a few patients had complained of transient headache, nausea, or loss of appetite. The maximum amount of prontosil album administered to any one patient in the second group was 69 grammes in the course of three weeks' treatment. In both groups prostatitis had rapidly subsided without massage.

Thirty further cases took 3 grammes of prontosil album by the mouth daily, in three doses, on six days a week, and 10 c.cm. of 5 per cent. prontosil soluble were injected subcutaneously three days a week; all lavage was omitted. In seventeen cases infected seven days or less before starting treatment the course lasted for from six to ten days; five cases infected from twenty-one to twenty-four days before treatment was started needed ten to fourteen days' treatment; three cases infected twenty-eight to thirty days previously required eighteen days' treatment; the maximum administration to any one case was 42 grammes of prontosil album by the mouth and eight injections of prontosil soluble. In this third series of thirty cases in which no lavage was carried out prostatitis subsided rapidly without any massage being undertaken. A few patients suffered from more or less severe headache, with nausea and anorexia, all of which symptoms disappeared on stopping the administration of prontosil and did not return on its resumption. Five cases were regarded as failures, since each had a copious urethral discharge, containing gonococci, after twenty-one days' treatment; failure had followed a first three or four days of apparent success. One of the five patients suffered from very severe headache, dizziness, depression, and loss of appetite; his blood count showed a total white cell count of 12,000 per c.mm., with 50 per cent. polymorphonuclear leucocytes and 12 per cent. transitional cells, the red cells being normal. Periodical blood counts in other patients in this third group had shown no abnormalities; it was also observed in this group that the first effect of prontosil was an apparent increase in the numbers of intra- and extra-cellular gonococci in the urethral pus or threads.

Guy's Hospital and Whitechapel Clinics

The discussion which followed was opened by Mr. AMBROSE KING, who said that at the Whitechapel clinic experience had been limited to the treatment of thirty-six patients with prontosil album. They gave 5½ grammes daily for two days, 4 grammes daily for three days, then 2½ grammes daily for three weeks. Thirteen male patients with acute uncomplicated gonorrhoea had received this dosage without ancillary treatment; only two made a prompt and complete clinical recovery; some did well for a while but relapsed. Thirteen others had received prontosil and daily urethral irrigations with potassium permanganate solution, 1 in 8,000. The gonococci and the discharge had promptly disappeared, and the urine had become, and had remained, clear in each case. In this small series he had seen minor but no severe complications of treatment. Recently blood counts had been done twice weekly on all patients receiving prontosil, and invariably there was a marked fall in the white cell count, sometimes preceded by a transitory rise; in a few cases the number had fallen to 3,000 per c.mm.

Dr. A. H. HARKNESS said that he had had 75 per cent. of successes in early cases of gonorrhoea following the oral administration of tablets of prontosil album, combined with posterior irrigations of potassium permanganate solution, 1 in 7,000, twice daily. Chronically infected patients still harbouring gonococci, in spite of orthodox treatment, reacted extraordinarily well to prontosil alone, and in most cases after a few days gonococci could no longer be demonstrated. Other patients, too, with residual *B. coli*, staphylococcal, or streptococcal infections of the urethra responded rapidly to this treatment, but the results were no better than those obtained with ammonium mandelate. Excellent results had also been observed in acute gonococcal epididymitis, and in these cases no local treatment was necessary, but he had not been impressed with the results in gonococcal rheumatism. He agreed with Felke that better results were obtained if treatment was delayed for a fortnight or three weeks, but during this period the patient ran a great risk of developing complications, whereas if local treatment was instituted as soon as possible complications would rarely be seen. If local treatment was delayed for three to four weeks the results with posterior irrigations were always excellent without the aid of prontosil.

Mr. V. E. LLOYD said that at Guy's Hospital clinic ten cases of acute prostatitis had received varying doses of sulphanilamide by the mouth; the results were excellent in four cases, indeterminate in three, and poor in three. He had been impressed by the rapid cessation of symptoms and disappearance of purulent discharges; this might be a source of danger, lulling patients into a false sense of security and so increasing the number of defaulters. Malaise, dizziness, mental confusion, and depression had occurred. Great care was to be observed, therefore, in giving sulphanilamide to transport workers and other motor drivers. Twelve cases of acute epididymitis had also been treated, the results being excellent in five, indeterminate in five, and poor in two. In chronic gonorrhoea in the male rapid improvement had followed in an encouraging number of cases at various stages from the first to the third month after infection.

Dr. A. G. JOHNSON, also of Guy's, said that thirty-eight untreated cases of acute gonococcal urethritis were given

daily lavage and 3 grammes of prontosil daily for fourteen days, and 1½ grammes daily for the next seven days. There were twenty-two good and sixteen bad results; the average total dose was 50 grammes. The average period of persistence of urethral discharge in successful cases was seven days, as compared with forty-three days in eighty-five cases in which lavage alone was carried out. Cases which failed to clear up completely in less than a month were regarded as failures. Dr. MORNA RAWLINS said that in Guy's Hospital venereal diseases clinic sulphonamide preparations had been used orally for gonorrhoea in women since October, 1936. The drug was of great value, and in some cases striking cures had resulted; 50 per cent. of the cases treated with sulphonamide only had reacted favourably. At present cases were being treated with this drug and by local antiseptic swabbings with very good results. In roughly 33 per cent. reactions of some sort occurred. Some of the cases had been under observation for as long as eleven months. Dr. KATHLEEN BROWN said that she had used prontosil album in a small series of cases of gonococcal vulvovaginitis at the Children's Medical Home, Waddon. The immediate results were good, and the profuse purulent vaginal discharge had cleared up within two or three days in the majority of cases, but full tests for cure over a period of six months' observation had not yet been completed. She drew attention to the toxic manifestations of the drug in children.

New Compounds

Colonel L. W. HARRISON referred to observations made by Felke on an experimental prontosil derivative, termed DB 90, now being tried in some clinics under the temporary name of "diseptal," which seemed to show that remedies of this class would yield the best results with minimum dosage if their administration was deferred for a fortnight or longer until the tissues had acquired a readiness to overcome the infection (*Heilungsbereitschaft*). Felke's observation seemed to be supported by the cases detailed in an earlier paper by Grütz on similar compounds, as also by what had been said that evening by a number of members as to the good results afforded by prontosil in chronic cases and in women and children, who tended to come under treatment later than did male patients.

Dr. G. L. M. MCELLIGOTT said that his results in about 250 patients bore a remarkable similarity to those of Dr. Hanschell. He had seen every toxic manifestation described by previous speakers, but with two exceptions—cases of severe dermatitis which took over a week to subside—all these had been transient and had disappeared within two days of ceasing administration of the drug. He had, however, seen that very night a case of slight but definite jaundice in a patient under treatment with sulphanilamide, but did not know whether this condition was *post hoc* or *propter hoc*.

Dr. T. ANWYL-DAVIES said that this remarkable drug was most intriguing, but that his results were not so remarkable. He had been unable to obtain the 70, 85, and 90 per cent. of successful results in acute male urethritis described by other speakers, whom he congratulated. His results, controlled by pathological tests, not by clinical cure, had not reached 50 per cent., even in his most advantageous series. He could not enter into details, but he had employed both small and large doses, as had other speakers, orally and intramuscularly. His case reports and patients at St. Thomas's Hospital were open to inspection and criticism; he would be grateful for suggestions so that he, too, might be able to obtain a higher percentage of cures.

Dr. Anwyl-Davies was followed by other speakers, including Dr. A. J. COKKINIS, whose interim report on his work in this connexion was published in full in the *Journal* of November 6 (p. 905).

RECENT WORK ON VIRUS DISEASES

At a pathological meeting of the Liverpool Medical Institution on October 28, with the president, Professor R. E. KELLY, in the chair, Dr. G. M. FINDLAY of the Wellcome Bureau of Scientific Research, London, read a paper on recent advances in the study of viruses and virus diseases.

Dr. Findlay said that there were two theories of the nature of viruses. The first was that they were minute organized living entities, one generation being the direct descendants of the previous generation—a theory which could be traced back to Thomas Fuller, who in 1730, in his *Exanthematologia*, spoke of the *particles* which constitute the material and efficient cause of the small-pox. The second theory regarded viruses as autocatalytic substances, possibly derived originally from the hosts' cells and capable of synthesizing the same autocatalytic substance from the hosts' tissues. Both theories now appeared to be true. Elementary bodies had been described in variola, vaccinia, sheep-pox, fowl-pox, psittacosis, ectromelia, Borna disease, influenza, lymphogranuloma inguinale, varicella and zoster, the Rous sarcoma, infectious myxomatosis of rabbits, and the filterable fibroma of rabbits. On the other hand, heavy proteins, probably nucleoproteins, had been isolated from plant tissues infected with certain viruses, such as tobacco mosaic, tobacco ring spot, cucumber mosaic, potato X disease, and the bacteriophage. Some of these heavy proteins could be obtained in crystalline and para-crystalline form and were apparently themselves the viruses. Heavy proteins endowed with virus infectivity had also been isolated from rabbit papillomata, equine encephalomyelitis, and yellow fever. It had been suggested that the heavy virus proteins were in reality proteinases, protein enzymes, capable of synthesizing themselves. The term "a new virus disease" had been used in more than one sense: to describe (1) a disease which was new because, though always present, it had been but newly differentiated from other diseases; (2) a disease that had been introduced from some endemic region into another area where it had never previously been seen; and (3) a disease the causal agent of which has arisen *de novo*, probably as a result of a virus modification or mutation. Examples of the first type of "new disease" were lymphocytic choriomeningitis and swineherd's disease; of the second, the introduction of three days' sickness or ephemeral fever of cattle into Australia in 1936; of the third, St. Louis encephalitis in man and in animals, infectious myxomatosis of rabbits, and equine encephalomyelitis, both of which must have arisen in America since the Spanish conquest.

Although in view of the existence of virus proteins the possibility still existed that viruses might arise from the cell as a result of some stimulus, the pathogenic viruses were in the vast majority of cases introduced into the body from without. Prevention of virus disease thus consisted in preventing viruses from gaining entrance either to the body or to the cells. Entrance to the body might be prohibited by chemo-prophylaxis applied especially to the nasopharyngeal mucosa, although there was the danger that by the application of chemicals such as a 1 per cent. solution of zinc sulphate virucidal substances normally present in the nasopharynx might be destroyed. Immunoprophylaxis, which aimed at neutralizing the virus and thus preventing its entrance into the cell, consisted of the injection of either immune or hyperimmune serum alone, killed virus, virus attenuated by physical or chemical means, virus accompanied by immune or hyperimmune serum, and virus attenuated biologically. Lastly Dr. Findlay drew attention to the phenomenon of virus interference, by which the injection of a mild or non-pathogenic virus protected the body against the action of a more virulent virus injected a few hours later.

Discussion

Professor H. D. WRIGHT said that, as was pointed out by Boycott several years ago, the newer physical conceptions of atomic structure tended to make less easy the distinction between live and dead and to make more feasible the conception of evolution from inanimate to animate matter. The conception of "crystalline viruses" of relatively simple structure facilitated the adoption of such ideas from the other direction. These "animated enzymes" fitted well into an order of development leading up to the bacteria, but it should be remembered that viruses were not all alike and represented a range of beings of varying size and possibly of varying complexity. Certainly from some of them substances similar to the specific soluble substances of the bacteria seemed to have been isolated. The conception put forward by the lecturer as to the nature of the simpler forms bore distinct resemblances to Bordet's idea of the so-called bacteriophage phenomenon as a transmissible bacterial autolysis, in effect a self-reproducing enzyme. The modification of viruses resulting from special manipulations was paralleled in the change of type of pneumococcus effected by Griffith, and the phenomenon of interference by some, perhaps doubtful, experiments on "depression immunity" in streptococcal infections. The resemblances between viruses and bacteria still seemed to exceed the differences between them. Dr. A. E. HODGSON said that recent research gave hope that the causative entity of measles and mumps, and perhaps of small-pox, varicella, and poliomyelitis, was nearer recognition. It was also gratifying that the good results in modern measles prophylaxis by the use of "convalescent" and "adult" serum were, it would appear, based on sound scientific reasons. Dr. HUGH SMITH pointed out that the organism of pleuropneumonia appeared to be an intermediate link between virus and bacteria. He also spoke of the apparent affinity for certain tissues in virus diseases and referred to encephalitis lethargica, mumps, measles, and chicken-pox. In passing he mentioned that chicken-pox lesions were fewer and less virulent than formerly.

Dr. T. F. HEWER, in referring to Dr. Findlay's description of the use of primulin to detect elementary bodies of virus in tissue culture, said it was unfortunate that this method could not be applied to fixed tissues. In the case of yellow fever particularly it was often difficult to recognize intranuclear inclusions, and the discovery of a truly specific stain would be of great value in differentiating between the eosinophil products of nuclear degeneration and true inclusions. Our knowledge of the nature of inclusion bodies was at present very incomplete. Dr. Findlay had described the attenuation of viruses in culture: was it likely that such attenuated cultures would reach a stage of equilibrium and maintain their antigenic properties? In New York vaccinia virus was being cultured in large quantities for vaccination purposes in place of calf lymph.

FAMILIAL FACTOR IN MATERNAL MORBIDITY

At a meeting of the North of England Obstetrical and Gynaecological Society, held in Sheffield on October 29, with the president, Dr. J. W. BRIDE, in the chair, Mr. P. MALPAS (Liverpool) read a communication on the familial factor in maternal mortality and morbidity.

Mr. Malpas discussed five families, each with an extremely bad obstetric history. Albuminuria, eclampsia, accidental haemorrhages, and stillbirths had occurred repeatedly, both in the same member and in different members of the same family. The familial nature of cardio-renal disease was well known; it seemed likely that investigation of the familial aspect of cases of toxaemia of pregnancy would reveal a similar relationship. This was therefore an important aetiological factor. He confined his remarks to some cases encountered recently in a small town, in which most of the families were known to a few doctors and midwives. The material in this community had been investigated previously as to the incidence of foetal malformations and recurrent abortion. It was a striking fact that in each inquiry the same families were prominent. In his opinion it was likely that a large part of public health obstetrics was derived from a relatively small section of the population.

In the discussion which followed the PRESIDENT said that he thought the problem was largely a social one. Mr. MILES H. PHILLIPS (Sheffield) believed that intermarriage in such communities was an important factor. Mr. J. E. STACEY (Sheffield) referred to the importance of the familial factor in many diseases. Dr. J. W. CLANCY (Sheffield) said that he had had much experience of maternal morbidity occurring in members of the same family. Mr. GLYN DAVIES (Sheffield) pointed out that the matter could not be investigated thoroughly except in co-operation with competent geneticists. In his opinion Mr. Malpas had made an excellent case for the setting up of chairs of medical genetics at the various universities.

Pathological Specimens

Dr. J. W. BRIDE showed specimens of a malignant melanoma of the vulva and an endometrioma of the pelvic colon.

In the case of the melanoma he first saw the patient for prolapse, and treated her with a ring as operation was refused. Twelve years later she was referred to him again with a black, ulcerated tumour of the clitoris and a large gland in the left groin. A biopsy was done and the specimen found to be a melanotic sarcoma. He performed a vulvectomy, and removed the gland in the left groin. Eardley Holland had published in 1908 a review of the cases up to that date. In it he stated that these tumours usually originated as primary sarcomata, and not in pigmented moles. He found that of twenty-six patients nineteen died, and only one was free from recurrence at the end of three years. Dr. Bride went on to say that his own patient had died five weeks after returning home.

His second patient was aged 32, had been married ten years, and gave a history of premenstrual dysmenorrhoea for that time. There was no dyspareunia, and the patient had had a curettage seven years previously, which had given relief for three years. On examination a mass was felt to the left of the uterus. At laparotomy it was found that the mass was actually a constriction of the pelvic colon, which gave the impression of being a carcinoma. The left tube and ovary were removed; at a later operation the part of the colon concerned was resected by the Mickulicz and Paul method. The specimen showed that the bowel wall apart from the affected portion was normal. Histologically the bowel wall showed marked invasion by endometrial elements.

Professor W. FLETCHER SHAW (Manchester), Professor WILLIAM GOUGH (Leeds), and Mr. J. E. STACEY (Sheffield) had all seen cases of melanoma of the vulva; none of the patients had recovered. Professor W. GOUGH and Professor MILES PHILLIPS (Sheffield) also said that they had seen cases of endometrioma of the colon, and had resected the gut involved, only to find on microscopic examination that the specimen was not carcinomatous. Mr. GLYN DAVIES (Sheffield) had seen one case in which the growth proved to be carcinomatous, but in this patient it was not near the site of the endometriomatous infiltration.

Superfoetation

Dr. D. C. RACKER (Manchester) showed a specimen of superfoetation. The patient, a primigravida, was aged 36. She had had a normal delivery of a 5½-lb. child, and shortly afterwards two other foetuses were born. The first child was evidently not premature, but the other two measured respectively 29 and 28 cm. in length, and weighed just under 1 lb. each. Dr. Racker quoted Meyer as having said that superfoetation was impossible, and Studdiford, who said that there was no genuine case in the literature. In Dr. Racker's opinion an open mind

should be kept on the matter. It was well known that menstruation could occur during the first three months of pregnancy, and there was no reason for assuming that this was anovular; if ovulation did occur before the chorio-decidual space was obliterated, then a second pregnancy might arise. Studdiford's criteria were that the woman must produce two or more foetuses widely differing in size and development. If the smaller was born dead its placenta must be examined microscopically and proved to be healthy; if living, then there should be an *x*-ray examination of the centres of ossification. Dr. Racker said that his case had fulfilled these criteria, except that the foetuses had not been *x*-rayed.

Professor FLETCHER SHAW mentioned a pre-war case which had received wide publicity in the newspapers, in which a woman had a full-time baby and three months later had another full-time baby. Professor MILES PHILLIPS thought that an angular pregnancy would make superfoetation more likely. Mr. JEAFFRESON (Leeds) said that all the authorities were of opinion that ovulation ceased during pregnancy, and such being the case superfoetation was impossible.*

Cullen's Sign

Dr. E. A. GERRARD (Manchester) showed a patient in whom the appearance of Cullen's sign had prompted a diagnosis of ante-partum rupture of a Caesarean section scar.

The patient was at the thirty-seventh week of her second pregnancy. She had had a classical Caesarean section three years previously. Two days before he saw her she had had an attack of acute abdominal pain, and shortly afterwards noticed a reddish stain at the umbilicus. On examination her general condition was excellent; at the umbilicus there was a reddish-purple stain the size of a shilling.

At laparotomy he found a tear in the uterus, one inch long, fortunately plugged by the placenta. He incised and enlarged the rupture, and delivered a live child. He said that Cullen's sign was more usually found in cases of ruptured ectopic gestation, and he did not know of a case similar to the one he described.

He showed, too, a case in which a full-time macerated foetus was delivered at laparotomy from a thinned-out sac of uterine muscle and broad ligament. A feature of the case had been the relative smallness of the cervix.

In discussing the first of these two cases the PRESIDENT said he had never seen Cullen's sign demonstrated, but he thought it had been extremely helpful in this instance. Professor WILLIAM GOUGH and Mr. W. D. GALLOWAY (Holmefirth) had each seen a case. Professor MILES PHILLIPS mentioned a case in which the sign was present but there was no haemorrhage.

RECENT ADVANCES IN TROPICAL MEDICINE

At a meeting of the West London Medico-Chirurgical Society, held at West London Hospital on November 5, with Dr. D. G. RICE-OXLEY in the chair, Sir LEONARD ROGERS gave an address, with lantern demonstration, on "Recent Advances in Tropical Medicine in Relation to General Practice." He spoke first of amoebic dysentery, and related his own investigations on this condition from the time of his arrival in Calcutta in 1900, which was shortly after Shiga had identified the micro-organism which bore his name. In the leading textbooks of that time, such as that of Manson, no distinction was made between amoebic and bacillary dysentery. There was at that period great difference of opinion as to whether liver abscess was connected with dysentery, and only after considerable work in the field was the true picture elucidated. Amoebic dysentery had been too much regarded as a disease limited to the Tropics, and manifestations of amoebic infection seen in this country had been put down to colitis or to other conditions of the colon or rectum. The lecturer mentioned the early experiments with ipecacuanha, which was presently found to be of use only in the dysentery due to the entamoeba, upon which the drug had a selective effect. To-day it had been largely superseded by emetine hydrochloride, given intramuscularly, which was more effective.

The lecturer touched on undulant fever, formerly known as Malta fever, and recounted the work of Bruce in tracing the infection to goat's milk. The work on undulant fever was one of the finest examples of research due to animal experiment, and, though there were those who claimed that the disappearance of the disease from Malta in the middle of the first decade of this century was due to the closing of an insanitary barracks, an examination of the dates and facts did not bear out their contenton. After glancing at yaws he came to what he described as the most important disease in the world—namely, malaria—and described the original work done in recent years in Germany, where in chemotherapeutic investigation they were far ahead of any other country. The new remedy of plasmoquine appeared to have a selective action upon the sexual stages of the malarial parasite, and another drug coming into wide use was atebrin, which exerted its most powerful action on the subtertian parasite. At present he preferred to use atebrin because it was possible to employ it in small doses and it was much less unpleasant than other drugs to take. He touched next on sleeping sickness, and gave a short account of the work of David Bruce and others on the tsetse fly. The difficulty in the treatment of this disease was that, apart from the preliminary stages, the parasite was no longer confined to the blood but entered the cerebrospinal system, where some of the drugs could not follow it. A drug which did enter the cerebrospinal system was tryparsamide, but the trouble with this class of drugs was their liability to induce blindness, and research was being directed to overcoming this disadvantage.

Sir Leonard Rogers's concluding remarks were devoted to yellow fever, and he mentioned that this was the disease above all others which never occurred in the same individual a second time. It was now known that if a few drops of blood were taken from a person who had had yellow fever thirty or forty years previously that blood would form an antidotal serum which, mixed with the virus, would prevent the infection of a mouse. Answering a question with regard to the relation of incidence of malaria to altitude, Sir Leonard Rogers replied that malaria might occur up to 6,000 feet, but not much over.

GASTROSCOPY

At a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland, on November 5, with the president, Dr. E. T. FREEMAN, in the chair, Professor HENRY MOORE gave a demonstration of the Wolf-Schindler flexible gastroscope.

Professor Moore demonstrated the use of the instrument on an elderly woman who had been under observation for six months. She had a moderately large peptic ulcer of the lesser curvature of the stomach, anaemia, and loss of weight. The radiological diagnosis suggested malignancy, but the gastroscope showed that the ulcer was a simple one and also revealed an erosion in the pyloric antrum and gastritis. The patient did well on medical treatment, and gastroscopic examination after five months showed that the ulcer and the erosion were quite healed. Gastroscopy saved this patient from gastrectomy.

General Discussion

The president, Dr. E. T. FREEMAN, said that this instrument might alter current views on gastric and duodenal conditions. He thought that in the last fifteen years

* Bryan C. Murless and F. I. McLaughlin in our issue of June 26 (p. 1309) described in detail another apparent case of superfoetation.

perhaps too much attention had been paid to ulcers of the duodenum, to the neglect of that old-fashioned disease gastritis. Mr. P. J. SMYTH said that he had passed this instrument on twenty-five patients. In the Mater Misericordiae Hospital every patient was given atropine before the induction of local anaesthesia by decicain. The decicain was administered very slowly, and then the stomach tube was passed, attached to the pump, and the stomach evacuated. The instrument was said to be especially valuable for showing a jejunal ulcer on the stoma of a gastro-enterostomy and for controlling the healing of an ulcer. It was possible with the gastroscope to diagnose gastritis quite definitely. He was not sure whether the instrument would help much in differentiating benign from malignant ulcers; the part of the stomach which it showed least well was the lesser curvature. Dr. M. A. MORIARTY stressed the importance of properly anaesthetizing the patient. Dr. G. C. DOCKERAY asked if it was dangerous to use the instrument in cases in which there were oesophageal varices. Dr. ALAN THOMPSON said he knew from personal experience that the passage of an oesophagoscope was most unpleasant. He thought gastroscopy should not be carried out in a case of dyspepsia unless it was absolutely necessary. Dr. C. J. FLOOD hoped that the gastroscope would eliminate the radiologist, as radiology was a luxury which patients were often unable to afford. He thought it should be possible to dispense with, or at least reduce, the local anaesthesia, which prevented the patient from swallowing comfortably. Others who took part in the discussion were Dr. J. B. MAGENNIS, Dr. L. ABRAHAMSON, and Dr. MCCANN. Professor MOORE, in replying, said that he regarded the gastroscope as complementary to radiology. He had had only two failures with the instrument in thirty-five cases.

Local News

ENGLAND AND WALES

School for Rheumatic Children at Leeds

According to the *Yorkshire Post* a proposal is on foot at Leeds to build a special school for rheumatic children on a site adjoining the James Graham Open-Air School at Farnley. The treatment of juvenile rheumatism and the prevention of heart disease have been under consideration during the past two years. Dr. G. E. St. Clair Stockwell, the school medical officer, reported that the urgent need was to concentrate on the supervision and care of children who had within recent weeks or months suffered from their first or second attack of rheumatism of a milder and more insidious type, and who had recently developed signs of valvular disease. It is proposed to build a two-story residential block, the ground floor to be used for rheumatic children and consisting of two wards, one for twenty-five girls and the other for twenty-five boys. The first floor will be for residents from the open-air school, and will contain a ward for twenty-five girls and another for twenty-five boys. Three classrooms will be provided for the fifty rheumatic children. The cost of the building is estimated at £20,000.

An Arthritis Unit in London

Sir Kingsley Wood, the Minister of Health, on November 10 laid the foundation stone of the new arthritis unit at the Hospital of St. John and St. Elizabeth, London. The associated research laboratory has been provided by the Empire Rheumatism Council, and the arthritis unit is the second of its kind to be established in this country. Sir Kingsley Wood said that estimates made some little time ago showed that the time lost from rheumatic diseases represented a total incapacity of 5½ millions of weeks and the cost to National Health Insurance funds was over five million pounds a year. If account was also taken of wages lost on account of the disease the annual cost of industrial rheumatism was some seventeen million pounds. There were three weapons against the disease—physical treatment clinics, arthritis units, and the spa hospitals. This new arthritis unit marked a step forward in the direction which it was so necessary unceasingly to pursue—the provision of facilities for study and treatment. The unit would provide beds for research in the early stages of the disease as well as prolonged investigation of each case by a team of workers and treatment under good conditions.

L.C.C. Midwifery Service

The Minister of Health has approved the proposals put forward by the London County Council under the Midwives Act, 1936, for the setting up of a domiciliary service of midwives, and the scheme will be brought into operation on January 1. The Metropolitan Boroughs Standing Joint Committee, while expressing its regret at the Minister's decision, has assured him of its readiness to co-operate with the Council to the fullest possible extent so as to ensure that the scheme shall work efficiently and to the satisfaction of all concerned. The Council is taking steps to appoint the forty-two whole-time salaried midwives for the purposes of the scheme. In addition to these midwives, to be appointed directly by the Council, a minimum of about 120 whole-time midwives will be employed by arrangement with upwards of forty voluntary organizations. When the new scheme comes into operation every London mother, irrespective of her financial circumstances, will be able to call on the services of a fully qualified midwife of her choice. The fees proposed to be charged will be £2 for first confinement, 30s. for subsequent confinement, and 30s. for maternity nursing. Reduced fees will be charged or the whole fee remitted where the circumstances justify such concessions.

New Researches at Papworth

In his report for 1936 Sir Pendrill Varrier-Jones, medical director of the Papworth Village Settlement, again emphasizes the importance of a permanent job for tuberculous patients in whom the disease has been arrested. Prolonged medical treatment may be rendered useless, he states, unless followed up by that one necessity which the sub-standard worker cannot secure unaided—a well-paid job. Employers can scarcely be expected to choose such men if others are available; nor is it desirable that they should do so, for in the rush and turmoil of modern industrial life a recrudescence of the disease is almost inevitable. The solution is co-operation in giving away jobs which will keep these sub-standard workers employed in suitable environment. This is the method of the Papworth Village Settlement. Until some far-reaching advance in preventive or therapeutic methods takes place the widespread extension of the Papworth plan offers the best means of national and humane treatment of tuberculosis. Researches in the biochemical department include studies of the possible relation of a physiological "zinc diathesis" to tuberculosis resistance factors in both man and animals, with similar investigations of the mechanism underlying the reciprocal relation of tuberculosis and cancer.[1] Analyses have also been made of the zinc content of normal human teeth with a view to assessing the relationship of this content and tuberculosis. "Papworth Industries" continue to progress. It is stated that one-third of the personnel have now been steadily employed for ten years or longer, and a further third for periods between five and ten years.

[1] *Tuberculosis, Cancer, and Zinc.* Medical Publications, London. 1936.

Royal Veterinary College New Buildings

The King, accompanied by the Queen, opened the new buildings of the Royal Veterinary College at Camden Town on November 9. They were welcomed by the Duke of Gloucester, president of the College, Lord Crewe, senior vice-president, and Sir Merrik Burrell, chairman of council. Their Majesties were then conducted to the great hall, where the opening ceremony took place. Sir Merrik Burrell read an address to the King, in which it was stated that the new buildings replaced those erected in 1791 during the reign of George III. The College had had royal patronage since 1830, and received its first Royal Charter in 1875. The decision to rebuild was made fourteen years ago, and £325,000 was required for that purpose and for the building of the large animal hospital and operating theatre, in order to complete the building scheme and to provide the full scientific equipment of the College. Of that sum £150,000 was granted by the Government and £135,000 had become available with the help of subscribers, leaving a further sum of £40,000 still required. The King, in his reply, said that both the Queen and he were very glad to be at the opening ceremony, and he expressed their deep interest in the prosperity of the livestock industry in this country. He said that the well-being of the whole community depended largely on the health of domestic animals being cared for by a highly trained veterinary profession. The Government, the King continued, was taking steps to form a national veterinary service, through which to conduct a vigorous attack on animal diseases on a national scale, but successful research, wise administration, and efficient practice all depended on the sound education of the individual. The medical profession was represented at the ceremony by Viscount Dawson of Penn, Lord Horder, Sir Arthur MacNalty, and Sir Ernest Graham-Little.

SCOTLAND

Maternity Treatment in Lanarkshire

The annual report of Dr. Henry J. Thomson, physician-superintendent of the County of Lanark Maternity Hospital at Bellshill, outlines a scheme adopted there for domiciliary treatment of maternity emergencies. Arrangements have been made whereby immediate treatment is given by two doctors and two trained nurses in the patients' homes. This obviates the risk attached to removal to hospital of a patient who is severely exhausted by some obstetrical complication. A car is provided to carry five people and all the maternity equipment that may be necessary, and is ready to proceed at any time to a case within the local authority's area. In 1,956 confinements treated by the county maternity hospital during the past year there were only fourteen deaths, and it is interesting to note that out of 1,073 of the patients who had antenatal supervision only two died, while out of 883 who had had no such supervision there were twelve fatal cases.

Glasgow Eye Infirmary

At the opening of a new outdoor dispensary and nurses' home of the Glasgow Eye Infirmary Mr. Walter Elliot, Secretary of State for Scotland, said that to-day in Scotland there were 8,700 blind persons, a figure which, however, was being steadily reduced, particularly among the younger generation. The number of blind persons between the school ages of 5 and 15 years had fallen by nearly 50 per cent. since 1922. It cost £40 more per annum to educate a child who was blind or had defective vision than a normal child. There was still work in front of them, however, as people were now living longer, and if they were to be a nation of older men and women they should be a nation of active old men and women who could see efficiently. Lord Weir, who performed the opening ceremony, said that the number of patients seeking treatment at this institution had grown from about 10,000 per annum to the present figure of 35,000. This growth in numbers was a reflection of an improved health-consciousness and improved discipline on the part of the community. Mr. P. J. Dollan said that the corporation of Glasgow was frequently compelled to organize health services because of the breakdown of voluntary systems, but it had no envious disposition towards the Eye Infirmary. Wherever the voluntary system did its work well the corporation would be glad to co-operate, and would not seek to put it out of existence.

Correspondence

Carcinoma of the Stomach

SIR,—I always read the papers of my friend Professor John Morley with pleasure and profit, though I sometimes disagree with his conclusions. In his lecture on carcinoma of the stomach, published in the *Journal* of November 13 (p. 949), he does not accept my view that carcinoma never develops in a healthy stomach. Unfortunately he appears to have seen only my Schorstein Lecture (1929), which was delivered eight years ago; had he read my more recent communications on the subject he would have found all his criticisms fully answered. He appears also to be unfamiliar with the remarkable work of Konjetzny, whose pathological investigations on a very large number of fresh specimens of gastritis, ulcer, and cancer removed at operation (whether wisely or not is immaterial to the present discussion) afford most conclusive evidence in support of my views.

It is curious that Professor Morley's analysis of Stewart's statistics (1931) should have led him to conclude that they "speak most eloquently against any close causal connexion between ulcer and cancer," because a more complete analysis led both Stewart and myself to an exactly contrary result. Thus, although only three out of fifty of the common carcinomata of the pyloric region were secondary to ulcer compared with eight out of twelve of the comparatively rare lesser curvature carcinomata, no fewer than three out of nine ulcers in the pyloric region showed malignant changes compared with only eight out of 172 in the lesser curvature region. In a similar series of 334 resections for ulcer Orator found that eleven out of thirty-four ulcers near the pylorus showed malignant changes compared with six out of 300 in the lesser curvature region. The friction of the mucous membrane caused by the very active churning movements in the antrum affords a reasonable explanation of the relatively great liability of prepyloric ulcers to undergo malignant degeneration.

Although I have myself seen no case in which free acid present when a growth was first recognized disappeared at a later date, it is obvious that this must occur when there is an associated, rapidly developing, gastritis, because achlorhydria is probably always the result of progressive gastritis; thus in 80 per cent. of our cases of achlorhydria the secretion of free acid returned with appropriate treatment. This explains Robertson's two cases (1935) and Wilkinson's case, as well as those of Golding-Bird (1841) and Konjetzny (1937), as they were all associated with the development of pyloric obstruction, which leads to progressive gastritis. On the other hand, I have seen three cases of chronic ulcer in which there was no fall in

acidity when at a later date malignant degeneration occurred, and I have seen a patient with ulcer-cancer who refused operation and in whom the acidity actually rose when the growth advanced; Polland and Bloomfield have observed two similar cases. In my Schorstein Lecture I was able to refer to only two instances in which a test meal had been given before as well as after the development of carcinoma associated with achlorhydria, but I have now seen six such cases, in all of which achlorhydria was known to be present before the carcinoma developed, and I have found records of thirty-eight similar cases. Among my cases were two of Addison's anaemia with achlorhydric gastritis in which carcinoma developed four and ten years respectively after the anaemia had been controlled with liver. Numerous similar cases have been recorded by Henning, Saltzman, Wilkinson, Strandell, and others.

I do not know why Professor Morley should quote Danish statistics of the incidence of achlorhydria when there are more extensive and more accurate British figures available—for example, my 2,448 private cases with fractional test meals analysed by Hartfall in 1932. The latter show that the incidence in England between the ages of 50 and 60 is 20 per cent. in females and 16 per cent. in males, as compared with 52 per cent. in Denmark. It is thus fallacious to argue from the Danish statistics that achlorhydric gastritis is not a precursor of cancer of the stomach. In Denmark, as in most Continental countries, the incidence of carcinoma of the stomach compared with its incidence in other organs is far higher than in Great Britain, though the total incidence is the same in all countries. The Anglo-Dutch investigations referred to in my recent Harveian Oration (*Journal*, October 23, p. 783) show how almost all known causes of gastritis are more common in Holland than in England; this, I believe, explains why the incidence of carcinoma of the stomach in Holland is two and a half times greater than in Great Britain, and presumably similar differences explain the greater incidence of achlorhydric gastritis in Denmark.

Cancer of the stomach is more common in men than in women because carcinoma of the breast and uterus occur exclusively in the latter, so that a smaller number of women predisposed to cancer are left to develop cancer of the stomach, the total incidence of cancer being the same in both sexes.

I have written at length in reply to Professor Morley's criticisms of my views on the pathogenesis of carcinoma of the stomach because, if I am correct, it is a preventable disease, and I prefer to preach its prevention rather than accept Professor Morley's pessimistic conclusions, which would leave us with no hope beyond the surgery which can offer nothing better than fourteen survivors among 207 patients.—I am, etc.,

New Lodge Clinic, Windsor Forest, Nov. 15. ARTHUR F. HURST.

The Incidence and Control of Cancer

SIR,—In his Harveian Oration, reported in your issue of October 23 (p. 783), Sir Arthur Hurst discusses the possibility of decreasing the incidence of cancer of the stomach. He says: "The extrinsic causes—gastric irritants of all kinds—however trivial they may appear to be, can be avoided, and it should at least be possible to lower the incidence in the very poor by two-thirds, to bring it down to the level of the incidence in the well-to-do." At first sight it would appear that reduction of the incidence of gastric carcinoma must be a real contribution to the lessening of human suffering; and it is a thankless task to point out that there is no guarantee that the total of such suffering would, in fact, be made less.

Sir Arthur, at an earlier place in his address, made the following statement: "The total incidence of cancer is approximately the same in both sexes, in the rich and the poor, and in all nations." It is a remarkably concise and comprehensive summary of a mysterious and, so far, inexplicable set of facts. Total cancer incidence is therefore unaffected by variations in the incidence at particular sites. The presumption that the reduction, or banishment, of cancer as regards a particular organ would lessen the total number of deaths from cancer is scarcely justified. In fact, the probabilities are against it. To take a somewhat brutal example: we could abolish cancer of the breast by amputating all breasts in infancy—but does anyone really believe that such a measure would decrease general cancer incidence? To come back to the question of decreasing the incidence of gastric carcinoma: if this were followed by an increase of, say, cancer of the throat, humanity would not be a gainer by the change.

All this is but another way of saying that, despite its protean forms, cancer is in some sense a unity—and prophylaxis as applied to particular organs is at best a makeshift, benefiting individuals, perhaps, but not in any sense getting at the root of the trouble. The only real hope would appear to be in immunology. In a paper which unfortunately at the moment I cannot trace the writer proposed—rather daringly—that everyone should be caused to have cancer by means of tar inunction, because there is some evidence that this form of growth, which is readily curable, protects against more serious trouble. There may, of course, be good reasons why this particular suggestion is impracticable; but along some such lines there is hope of progress.—I am, etc.,

London, W.1, Nov. 4. F. HERNAMAN-JOHNSON.

Early Diagnosis of Pregnancy

SIR,—It will no doubt interest Dr. Louis P. Bosman (*Journal*, November 6, p. 939) to know that considerable numbers of claw-toed frogs are at present maintained in London and Aberdeen, and that in Edinburgh we have over a thousand of them now being extensively used in pregnancy diagnosis tests. I know that a large number have been imported into America following upon the visit to Edinburgh of a New York obstetrician. In fact, I understand from the exporters that the demand for these frogs has become so great that it is not unlikely that restrictions may be placed upon their exportation.

I agree that the *Xenopus laevis* test gives results which are remarkable in their degree of accuracy, but I do not agree with Dr. Bosman when he suggests that none of the other tests at present employed is as satisfactory as this particular one. The *Xenopus laevis* test, like the Friedman test, offers very great advantages in those cases in which urgency is a factor, but my considered opinion, which is based upon some 25,000 tests, is that in a very great proportion of instances the Aschheim-Zondek test can provide information of great value which is not revealed by any other. Until some method of breeding and raising these claw-toed frogs in this country has been evolved it seems to me very unlikely that the use of them will become at all widespread. The organization of a laboratory for the maintenance and use of a thousand frogs is a very much more serious matter than is the setting up of one which uses mice or rabbits, which can be obtained locally at all times in considerable numbers. There is no doubt, of course, that for the majority of cases

in South Africa the *Xenopus laevis* is the ideal experimental material. I assure Dr. Bosman that the work of Hogben, Bellerby, and Zwarenstein is as well known in this country and America as it is in South Africa.—I am, etc.,

F. A. E. CREW.

Pregnancy Diagnosis Laboratory, Institute of Animal Genetics, Edinburgh, Nov. 12.

Research in Rheumatism

SIR,—When the Minister of Health laid the foundation stone of the new rheumatism research unit to be built at the Hospital of St. John and St. Elizabeth, the statement that this was the first of such units appeared last week in the Press. This is not the case. The first unit was established by the London County Council at St. Stephen's Hospital in connexion with the St. John Clinic and Institute of Physical Medicine, through the help of Sir Frederick Menzies. This unit has been running for two or three years, and valuable research has been done, in part in conjunction with the Lister Institute, on the relation of acute rheumatism to rheumatoid arthritis.—I am, etc.,

St. John Clinic, Nov. 14. LEONARD HILL.

Disseminated Focal Pneumonia

SIR,—I read with interest Dr. J. G. Scadding's description of disseminated focal pneumonia (*Journal*, November 13, p. 956). It seems not improbable that this title refers to some exceptionally severe cases of a "patch on the lung," a condition which is familiar to school matrons and to every physician who works in general practice.

It usually starts with an "influenzal" attack, with moderate fever, a sore throat, and a somewhat irritating cough. I have seen slight rigors more than once, and pain in the chest is not unusual in the early stages in adults. It is most frequent in children, but it may occur at any age; I have seen it in a septuagenarian. I believe that influenza, septic tonsils, and antral infection are all often associated with the disease. The cough persists and becomes more troublesome, and after an interval of some days an examination of the chest will reveal crepitant rales, suggesting a gradual extension of infection from the throat to the lungs. The crepitations often appear very suddenly, usually at the base of one or both lungs. They extend rapidly until their maximum development is reached. At this stage expectoration appears for the first time, and soon afterwards the patient feels much better, the temperature begins to settle, and the moist sounds in the lungs slowly die away. The disease lasts from one to six weeks, very commonly from two to three weeks. The temperature, which may be hardly raised, rarely reaches more than 101° F. The respirations may be 24 or 26 a minute, but there is none of the breathlessness and cyanosis which even a mild pneumonia will produce. In a severe case the patient is ill, but not very ill, although the complaint is exhausting; after even a minor attack convalescence is often slow. The sputum, examined at the request of anxious relatives, shows no unusual organisms. I have never suggested an *x*-ray examination of the chest, partly because the resulting pictures would certainly frighten everybody. Rest in bed in a warm room and a bottle of paregoric are all that is required. The loss of sleep caused by the irritating cough in the early stages is the only symptom which really needs attention.

Dr. Scadding's observations provide interesting information about a disease which does not appear in our textbooks. In my opinion, however, it would be in the highest degree unfortunate if the dread word "pneumonia" were to become associated with a complaint which runs a benign course and in which complications must be at least of such rarity that they need not seriously be considered. The absence of dyspnoea, of cyanosis, of profound toxaemia, and in fact of every symptom associated with pneumonia suggests that the pathology of the two diseases is essentially different in spite of the radiological evidence. The old-established term "patch on the lung" may be difficult to translate into Greek or Latin, but I find it less misleading than any other name yet suggested.—I am, etc.,

Woking, Nov. 13. L. G. HIGGINS.

Tuberculosis of the Cervical Glands

SIR,—I hope it is not too late for me to comment on the article on tuberculosis of the cervical lymph glands by Mr. R. Reid and Dr. M. C. Wilkinson in the *Journal* of October 16 (p. 740). The authors described 119 cases of the disease, presuming the causative organism to be the bovine tubercle bacillus on the grounds that (1) history of contact with human tuberculosis was obtained in only 16 per cent. of their cases; and (2) other observers have found the bovine bacillus in percentages of tuberculous cervical adenitis ranging from 90 in Scotland to 65 in England. As to the former it is unusual for the most painstaking search to establish such contact in more than one-third of any form of tuberculosis, even in regions where bovine infection has been wholly eliminated. Figures in the neighbourhood of 16 per cent. might well be expected where intensive family study is not stressed—it was stated that "in twenty-five cases no note was made." The figures under (2), I believe, are largely derived from typing experiments performed twenty to twenty-five years ago on relatively few highly selected groups of cases. I further believe that if repeated to-day they would reveal a vastly different proportion of bovine infection. Not only has the health of our herds improved—though, to our shame, it is still an international reproach—but pasteurization has become widespread, and much more milk is now boiled before consumption in the home.

The authors next suggested that the tonsil as a frequent portal of entry, which is generally acknowledged, was predisposed to the invasion of tubercle bacilli by previous attacks of tonsillitis. Their grounds for this assertion, which has often been made but never in any way substantiated, lay in the fact that eighty-five of their 119 patients "had a history or signs of tonsillar disease," and thirty-one of these had had tonsillectomy. This figure, of course, means nothing unless it is found to vary significantly from that in similar patients not suffering from tuberculous cervical adenitis. One would suppose that many of the latter might also admit to occasional sore throats, a malady common in England.

The third statement which I would question was the conception of cervical lymphadenitis as a localized, benign form of tuberculosis, because none of the 119 cases showed evidence of spread or generalization. No mention was made of serial chest *x*-ray films; nor is it clear for what period observation of the patients was continued. It is a fact that, though scrofulous children seldom die, a certain proportion of them do in late adolescence or in adult life develop pulmonary tuberculosis. This proportion probably varies in different localities, but among my own series on Tyneside, of 482 consecutive patients with phthisis, forty-four, or 9 per cent., gave an unequivocal history of previous tuberculous cervical lymphadenitis. In the same district tuberculous cervical adenitis in adults is frequently accompanied by pulmonary tuberculosis, which is not particularly benign in character.—I am, etc.,

BRIAN C. THOMPSON, M.D.,
Dorothy Temple Cross Research Fellow in Tuberculosis.

New York, Nov. 2.

The Problem of Safe Milk

Sir,—In a recent article the Agricultural Correspondent of the *Times* threw some doubt on the value of the Government's method of encouraging farmers to rid their cattle of disease. To support his argument he reported that not one of the ten doctors in a town in the South of England who were recently approached by a retailer were prepared to pay the extra 1d. a quart for tuberculin-tested milk. To the ordinary person this would appear to reflect discredit either on the progressiveness of the doctors concerned or on the value of tuberculin-tested milk. The fact is, as is constantly repeated in both the medical and the lay press, pasteurized milk is the only safe grade of milk. Admittedly if everyone drank only milk from tuberculosis-free cows there would be a great deal less non-pulmonary tuberculosis, but quite probably not much less illness due to other organisms conveyed by milk. In many big towns pasteurized milk can be obtained as cheaply as raw milk. Why, then, pay extra for tuberculin-tested milk, which may have in it streptococci, typhoid bacilli, or *Br. abortus*?

It is high time that all parties concerned—the Government, the farmers, the medical profession, and the public—realized that the elimination of disease from cattle is an economic problem and a veterinary problem. It should not be the concern of the public health authorities, whose plain duty is to recommend the pasteurization of all milk until the production of safe raw milk from disease-free herds is absolutely foolproof. Such an improvement in milk production is not likely to take place for many years. Meanwhile, members of the medical profession should set the example and make sure that their households are being supplied with pasteurized milk. If this is not available, then tuberculin-tested or accredited milk is preferable to an ungraded supply.—I am, etc.,

Boscombe, Nov. 7. J. W. P. Thompson, M.B., D.P.H.

Treatment of Psychoneuroses

Sir,—No one could complain of lack of interest in Dr. R. G. Gordon's recent lecture at the British Medical Association meeting in Leeds on the doctors' part in the treatment of psychoneuroses. Indeed, it was thrilling and full of interesting facts; there was not a dull moment. But I would that Dr. Gordon had not allowed the medical profession of Leeds to sink back comfortably in their seats and feel quite smug about psychotherapy, as if they were doing all that could be expected of them under the circumstances. Again and again Dr. Gordon stressed the danger of missing an organic lesion and mistaking it for a neurosis. I should rather say the danger of the medical profession is not this nearly so much as never taking or mistaking anything at all for neurosis.

Time was when any illness which was not understood was dubbed hysterical. My own father, the kindest of men ordinarily, let some eau de Cologne drop into a patient's eyes "accidentally on purpose" when she had what appeared to be hystero-epilepsy in his surgery. He argued that if she were really unconscious she would not feel it, but no attempt was made to get at the root of her trouble. The expression used was "just hysterical" or, a bit later, "merely functional," as in the case of a girl, one of the earliest cases which impressed itself on my memory, nearly thirty years ago. She had a paralysed arm: a very neat escape from an intolerable situation, her married employer having fallen in love with her. She had a good job as shorthand-typist and it was difficult to leave without explaining to her people, so she went to bed one night worrying about it; in the morning she was unable to use her right arm, which got her out of her difficulty. Now there is in the whole of Leeds no place where a case of this sort can be treated that is within the scope of a typist's purse, except where the professor of psychology of a divinity college gives up his day off once a fortnight to help these people and sees about twenty cases sometimes in a day at Belgrave Church.

One realizes that the general practitioner can do, and often does, excellent work psychologically, but it is not enough to say when he is stumped that the case is "purely functional" and give the patient a tonic. There ought to be somewhere like the Tavistock Clinic to which these people can go, and not send them for a sea voyage, during which they have time to brood and become worse, especially the introvert type who cannot afford to take a companion with him—and his need for companionship may be a major element in his affliction.

A word about the lay psychologist. It is to his credit that he is practically forcing us who are medical to sit up and take notice—my own interest was certainly stimulated by him. Just as the pioneer work in the saving of infants was begun by laymen, so they tend to be more interested in the fence at the top of the precipice, we in the ambulance below.

As Dr. Gordon says, we ought to catch the psychoneurotic young. In my work among infants I frequently find maladjusted babies of under 3 years old. I have not time to deal with them at the infant clinics but get their mothers to bring them separately and often to come themselves alone. Many of the mothers are nervy and irritable and make a bad environment for their children because of their unsatisfactory birth-control methods. The only child in itself makes his mother nervous, having all her emotional eggs in one basket (especially if her married relationship is poor). Both she and the child will improve mentally and physically when the next comes along.—I am, etc.,

Leeds, Oct. 31. Marion E. Mackenzie.

The Place of Pharmacology in the Medical Curriculum

Sir,—I read with interest the letter on the place of pharmacology in the medical curriculum by Dr. B. N. Ghosh of the Carmichael Medical College, Calcutta (*Journal*, September 11, p. 552). My experience—though not so profound as his—as a teacher of pharmacology in a medical college conferring degrees compels me to agree with Dr. Ghosh's conclusions. The desire to emphasize the scientific bases for drug action by animal experiments has unfortunately reduced the subject to a pure science devoid of all practical applications. If the old materia medica was taught as an empirical subject devoid of all scientific foundation, the new pharmacology is taught as a pure science with no bearing on the treatment of disease. The division of materia medica into pharmacology and therapeutics, taught at different stages of a medical student's career, is an altogether untenable one. The system that obtains in Edinburgh has certainly obviated this. Digitalis, salicylates, anthelmintics, and antipyretics primarily act in diseased conditions. According to the current system—at least in India—where pharmacology is taught as a pure science in a pre-clinical period, or at best in the early stages of the clinical training, the above drugs are "out of bounds" for the pharmacology teacher, for he dare not mention diseases, as the students know nothing of them. His legitimate domain is, therefore, just to demonstrate the action of

adrenaline on the blood pressure, of pituitrin on the uterus, of pilocarpine on the isolated loop of gut, and so on, and there he must stop short. The rest is handed over to the teacher of therapeutics, who is a clinician through and through. The subject of therapeutics, as taught in the final year of the curriculum at perhaps ten or twelve sessions, each lasting an hour, is expected to cover the entire field of materia medica. The teacher of therapeutics in most institutions in India is entitled to undertake this task on the strength of his clinical experience alone—an experience that has no scientific basis in pharmacology. This is at best empiricism. Clinical experience is as essential to a teacher of pharmacology as is scientific knowledge to a teacher of therapeutics.

I am altogether in agreement with your correspondent in his concluding observation that "the subject of pharmacology should be taught in the clinical period, and that therapeutics should be closely co-ordinated with it." The ideal is that pharmacology and therapeutics should be taught by the same teacher, who should be in charge of beds.—I am, etc.,

Department of Pharmacology, Medical College, Vizagapatam, Oct. 28. V. ISWARIAH.

Sulphanilamide in Gonococcal Infections

SIR,—A few weeks ago I was called in one night to see a case of acute gonorrhoeal urethritis. The patient, a male, told me that it was almost two weeks since the first appearance of the discharge. On examination I found that he had a temperature of 101° F., that he had a profuse discharge, and that there was a chain of enlarged glands in the groin on both sides so painful that he would hardly allow me to touch them. He had been having alkaline treatment for ten days. I put him on to prontosil album, 15 grains three times a day. The result was dramatic. In twenty-four hours the glands had diminished in size, the tenderness had disappeared, and they could be palpated with ease. On the third day the discharge had cleared up completely. Wash-outs with 1 in 8,000 solution of potassium permanganate were used in conjunction with the prontosil, but there can be little doubt, I think, that the speedy disappearance of the gross manifestations was brought about by the use of the latter.—I am, etc.,

Sedlescombe, Nov. 8. T. J. HOLLINS.

Inhalational Therapy

SIR,—The renewed publicity given to a so-called asthma cure which appeared in the Sunday papers a fortnight ago raises a number of interesting and important issues. They are important to the laity and the medical profession. One announcement is headed "Machine that Beats Harley Street." This is the sort of announcement beloved of the quack and frowned upon by the British Medical Association. One wonders what is the position of certain well-known medical men who allow their names to be associated with such articles, especially as it is boldly stated that treatment is carried out by *secret* machines, and that "air [is] being sucked over twelve medicaments which are picked up in invisible form." This particular article tells how an ex-service man has been cured of asthma by the treatment, and as a result letters have been received from many other sufferers.

The last campaign on behalf of this "American nephew of a Canadian chemist" used the name of a prominent film star in its propaganda, and claimed him as being cured. This name has been dropped for the very good reason that he was recently reported as having relapsed.

A few weeks ago a letter was published in the *British Medical Journal* from a doctor whose patient had commenced this particular treatment without his knowledge, and died shortly afterwards from acute bronchitis, brought about more or less as the direct result of the treatment, which, the letter said, took the finish off the furniture.

The purpose of this letter is not so much a criticism of a particular nostrum, but rather to query the wisdom of those doctors who associate themselves with any secret treatment which is given the tremendous publicity that this treatment has had. The same point would arise in view of the present ethical laws however efficacious the remedy may be.—I am, etc.,

London, W.1, Nov. 8. F. T. HARRINGTON.

"A Plain X-Ray"

SIR,—I should like to make peace between Dr. John Roth (*Journal*, October 23, p. 829) and Dr. R. Hermon (November 6, p. 940) in regard to the use of the terms "plain," "straight," or "direct" *x*-ray. Is it not more rational to cut out such adjectives entirely? The matter is apparently trivial, but the fact that it is discussed at all is psychologically interesting. In these days a radiologist should surely be asked to carry out an examination, and not to "take an *x*-ray," either plain or fancy. Not only is it unnecessary but actually it may be dangerous for a clinician to indicate what particular technical process should be utilized by the radiologist in his investigation. Therefore the adjectival *x*-ray has no rational meaning, except possibly between radiologists and technicians. How often has one seen the request for a "straight *x*-ray of kidneys" followed by the report "no radiological abnormality." It is obvious that a patient whose condition necessitates this expenditure of radiological time and material may not be helped by such an examination; whereas, given a well-reasoned assessment of clinical signs and symptoms, an invitation to the radiologist to "do his damnedest" would be most likely to produce the necessary elucidation. The same applies to examinations of the gall-bladder region, and others in which the so-called "straight *x*-ray" is often worse than useless until it becomes an essential part of a complete examination.

Reasonable collaboration between clinician and radiologist should not be an ideal at all difficult to attain, and if the radiologist is informed, however briefly, what is in the mind of his colleague, his knowledge of medical, surgical, and pathological principles is, or should be, quite sufficient to enable him to carry out whatever examination is necessary, with or without the aid of a surgical colleague. Therefore it would appear that the only adjectives properly applicable to *x*-ray examinations are "complete" or "inadequate."—I am, etc.,

Scarborough, Nov. 9. C. BELLAMY.

Technique of Cataract Extraction during Narcosis

SIR,—May I reply to letters written as the outcome of my article in the *Journal* of August 14 (p. 319)? Space did not allow of my discussing then various points which I shall deal with in a communication I am preparing for publication elsewhere. The condensed title of the article failed to clarify the fact that it mainly described (*a*) a method of holding the eye in cataract extraction delicately and so as to abolish any need for co-operative control by the patient, who may therefore be asleep, and (*b*) a method of firmly closing the eye incision by a satisfactory suture independently, if desired, of any question of narcosis.

Professor Emile de Grósz (September 11, p. 551), referring to 5,000 cases in a condensed generalization of fifteen lines, is describing a very different method of cataract extraction—the intracapsular, which is not generally adopted in England—and he also performs an iridectomy. The method of using a stitch as I have described is partly (there are other reasons) based on my desire to leave the iris intact and yet to obviate the risk of its prolapse afterwards. The omission of an iridectomy and the use of the stitch as described are not dependent upon the fact that the patient is operated on while asleep; some operators might adopt narcosis, yet prefer to do the customary iridectomy and not to use any stitch, provided that the narcosis is not in a form apt to be followed by vomiting.

To Mr. D. V. Giri (October 2, p. 681) may I point out that the administration of a narcotic before operation has been practised for many years, but the aim hitherto has always been to avoid giving the patients such a dose as would abolish their co-operative control of the eye because, with the customary technique of "fixing" the eye, difficulties arise if this occurs. To permit of narcosis (complete unconsciousness) the eye must be held in a manner such as I have described; having employed both methods, I prefer on the whole to have patients put fully to sleep for cataract operations and to have them remain so for some hours afterwards. Surgeons generally do not fully appreciate the profound psychological effects that operations can have on elderly persons. Anaesthetic risks are overt, surgical risks to the eye in cataract operations are virtually occult, and the general risks are relatively so. In the last six years I have been told of three cases of a fatal termination of urinary retention in men after ordinary simple cataract extraction. In this complication the functional "nervous" element plays a very strong part, and I am inclined to think that it is less, or abolished, following narcosis.

Mr. Giri brings in the question of the nurse's attention to the feeding and to the evacuation of the bowels and bladder of the patients sleeping after operation. Sleeping patients are not fed; they occasionally wake to ask for a drink of water and go to sleep again. I have never known a cataract patient who has been suitably "prepared" before operation need evacuation of the bowels within twelve hours or so; this is all too often a matter of days. I have similarly known of no difficulty in passing urine in the ensuing seven to fourteen hours of sleep; none may be passed, or patients may quietly wake up and ask to pass it and then go to sleep again. As to the drugs and doses, I have relied on the opinion of experienced anaesthetists, though I have not often administered, per rectum, more than 6 drachms of paraldehyde, and have never exceeded 8 drachms of paraldehyde, or 1/3 grain of omnopon. It is desirable to give an injection of 1/4 grain or 1/6 grain of omnopon two nights before operation, both as a "test" with reference to vomiting and other idiosyncrasies, and as a sedative. On sitting a patient out of bed the next day Mr. Giri does not state whether his patients have had an iridectomy or not; in any case, I should not like them to sit out so soon unless the incision in the eye had been closed by an appropriate stitch such as I have described.

Mr. J. J. Laws (October 16, p. 778) specifies that "co-operation is retained" in his mental hospital patients. There is much to be said in favour of the 2-drachm doses of paraldehyde which he mentions. Mr. S. Tibbles (October 23, p. 827) writes: "Since the whole operation is completed in about a couple of minutes." It is still common for the "gallery," in complete and inevitable ignorance of what is happening inside the eye, to adjudge the competence of an eye surgeon by his "speed"—a view which Mr. Tibbles epitomizes—and fail to look upon cataract operation as the work of refined "craftsmanship" which it is, and over which the operator should take as long as he likes.—I am, etc.,

London, W.1, Nov. 12. BASIL GRAVES.

Obituary

FREDERICK MILNES BLUMER, M.B., C.M.,

Consulting Surgeon, Staffordshire General Infirmary

We regret to announce the death on October 16 of Mr. Frederick Milnes Blumer of Stafford, at the age of 78 years. He was a native of Sunderland and a son of the late Dr. Luke Blumer. He received part of his early education in Germany and studied arts at Durham University, graduating B.A. in 1879, and afterwards studied medicine at Edinburgh University, where he graduated M.B., C.M. in 1884. He was then appointed assistant house-surgeon at Cumberland Infirmary, Carlisle, and became house-surgeon to the Staffordshire General Infirmary in 1885. In the following year he began practice in Stafford and was elected medical officer of health to the borough. In the latter capacity he became a pioneer in better housing for the working classes, and effected a good deal of slum clearance. Through his efforts some of the first model houses for workmen in this country were established. His tenure of office was also characterized by his persistent endeavour to secure the services of qualified midwives for the poor. He was elected to the staff of the Staffordshire General Infirmary in 1887, first as physician and afterwards as surgeon, and served on the honorary staff until 1927, his services to this institution being so valuable that he was requested to remain on the staff for three years after he had attained the age limit. On his retirement his services were recognized by the presentation of an illuminated address and election as consulting surgeon.

Mr. Blumer took a wide interest in public life. He was a member of the Guild of Social Health since its formation, and took an active part in its development into the present Guild of Social Welfare. During the late war he served on the Stafford Borough Tribunal and on the Mid-Staffordshire War Emergency Committee. In February, 1918, he became justice of the peace, and in the following year, shortly after he had resigned his position as medical officer of health, he was elected mayor of Stafford, though not a member of the town council. In 1932 he was unanimously elected the first president of the Mid-Staffordshire Medical Society and was a regular attendant, notwithstanding pressure of work and failing health. Before the war he had been president of the Staffordshire Branch of the British Medical Association and chairman of the Mid-Staffordshire Division. He is survived by his widow and three sons, one of whom, Mr. C. E. M. Blumer, is now senior surgeon of the Staffordshire General Infirmary.

A colleague writes: By the death of Mr. Blumer the medical profession in Mid-Staffordshire has lost a delightful colleague. He was a brilliant orator and possessed a keen sense of humour. His speeches and commentaries added greatly to the enjoyment of the meetings of the Medical Society, and we all feel that his passing from our midst has left a vacancy which cannot be filled.

Medico-Legal

DRAINAGE TUBE IN BLADDER

The action which Mr. H. P. Winsbury-White successfully defended last week before Mr. Justice Tucker in the High Court, after a hearing lasting eight days, raised a number of interesting points of fact and law. A surgeon was sued for negligence in or after the performance of an operation on which he is an admitted authority. The accident of a tube being retained in the bladder is unique in medical litigation. The learned judge ruled that the surgeon was not responsible for the negligence of the medical or nursing staff of the hospital in allowing the tube to be lost in the patient's body.

Mr. A. W. Morris, at the age of about 57, suffered from an enlarged prostate and arranged with Mr. Winsbury-White that he should go into St. Paul's Hospital, Endell Street, for operation as a private patient in a single ward. He was in fairly good though not first-class health, and had suffered from troublesome piles as well as prostatic enlargement. On November 27, 1933, the surgeon performed the preliminary operation, inserting a "Winsbury-White" tube for bladder drainage and irrigation and a small pre-vesical tube to drain the tissues outside the bladder. On December 18 he performed the second stage of the operation, inserted a perineal drainage tube, and attached it to the skin with one stitch, which he removed after a few days and replaced by the ordinary anchoring safety-pin. Leakage from the perineal wound was somewhat obstinate, but eventually the wound appeared to be dry for some days in succession and the surgeon discharged the patient on February 10 to the care of Dr. J. A. Dawson, his general practitioner. Healing did not progress satisfactorily, and towards the end of February Dr. Dawson telephoned Mr. Winsbury-White and asked his advice. The surgeon advised a wash-out. This was attempted on February 27, and on account of the intense pain and distress it caused Mr. Morris Dr. Dawson discontinued it. Nevertheless, he did not communicate again with the surgeon until March 28, when Mr. Morris attended the out-patient department. Here there was a conflict of evidence. Mr. Morris declared that he had emphasized in conversation with Mr. Winsbury-White the pain he had been having. Mr. Winsbury-White could not recollect any particular stress on the pain, and Dr. Dawson said that he had not, on the whole, been very impressed by the patient's complaints of pain throughout; Mr. Morris was in a bad nervous state and the prominent symptom from the doctor's point of view was the obstinate leakage. The out-patient card said "complaints of pain and some dribbling." The surgeon passed a catheter and tested for obstruction with a sound. He found none, and diagnosed residual inflammation, which, he judged, should clear up of itself. If he had been told of severe pain, he said, he would have written it down as a most important symptom. The patient passed water with little apparent discomfort.

On April 11 the patient attended the out-patient department again with a letter from Dr. Dawson reporting a complaint of very severe pain and loss of control over the rectal sphincters. Mr. Winsbury-White now realized, he said in evidence, that the situation was entirely different, and suspected a stone. A radiograph was at once taken, and showed a piece of rubber tubing, which appeared to be in the perineum. Operating the same evening, he removed the tube from the bladder; it was a perineal drainage tube three and a half inches long with the characteristic bevel edge. He unfortunately threw it away. The patient complained thereafter of persistent leakage and nervous trouble. He went back to work in a few weeks and remained under constant treatment; in August Dr. Dawson found him much better. In December he went to another hospital and had an operation for prolapsing piles and a rectal abscess. During the next summer the perineal wound would not admit the finest probe, but his pads were always damp. Dr. Dawson put this leakage down to a recto-vesical fistula, but when during the present action he was examined again by two specialists they found that the perineal opening was patent and that he had no other source of leakage. He started proceedings in 1935.

LIABILITY OF SURGEON FOR HOSPITAL STAFF

The learned judge pointed out in his judgement that there was really no question of the foreign body being anything but a perineal tube. Counsel for the patient naturally and properly explored every possibility of its having been introduced at one of the two operations, but against this was the statement of Mr. Winsbury-White that just before sewing up he had thoroughly explored the bladder with two fingers to see if he had left any fragments of tissue behind. The patient's case therefore rested, apart from the question of the surgeon's negligence in not detecting the tube on February 27, upon his being able to fix the surgeon with liability for the negligence of someone in the hospital among the various medical officers and nurses who had attended to him there. His task was difficult, because there is a line of well-established legal decisions which lay down that, generally speaking, a person can only be held liable for the acts of another when he is in a position to control or supervise those acts—the relationship of master and servant, or principal and agent. In Perionowsky *v.* Freeman (1866, 4 F. and F., 977) two surgeons of St. George's Hospital were sued by a patient who complained that he had been ill treated by some nurses who were bathing him, and the Court held that the surgeons could not be held responsible for actions of the nursing staff done in their absence. This decision has often been approved. The patient's counsel in the present case tried to show that the surgeon and the patient had made a special contract by which the surgeon had undertaken personal responsibility for everything that happened in the hospital. The learned judge, however, was satisfied that this idea of a special contract rested merely on the promise of the surgeon to give Mr. Morris his personal attention until discharge; and that even if this promise had been part of a special contract it had been amply fulfilled, and that Mr. Winsbury-White could not have taken more care of him than he did take.

Counsel attempted to distinguish between nursing duties like bathing and supplying hot-water bottles on the one hand and technical attentions like the shortening of tubes on the other. The learned judge, however, would not draw any such distinction. His remarks, although they do not create new law, affirm the existing law in terms of the relationship between a surgeon and the hospital staff after an operation, and may prove of great use in the future—subject to any corrections the Court of Appeal may see fit to make. He said that whatever the surgeon's liability might have been if the tube had been left in at an operation, a perineal tube had often to be handled by nurses, being, for example, replaced after nearly every motion, and regularly cleaned and shortened. This was, in his view, a necessary, ordinary, routine hospital process, which the resident medical officers and nurses were not only qualified to deal with but had a duty to deal with. It was unthinkable, he said, to expect that the surgeon should attend at hospital every time a tube was shortened or, still more, merely put in and out. Since he had not a duty to attend personally and perform these operations, he was not as a matter of law responsible for any negligence in the performance of those routine operations by the nursing staff or the resident medical officers. For similar reasons his lordship would not treat the case as one in which *res ipsa loquitur*—that is, in which the circumstances are such that the defendant has merely to prove his injury and the plaintiff must, to avoid paying damages, show that he was not negligent.

FAILURE TO DETECT A FOREIGN BODY

The position of greatest danger in the surgeon's case was perhaps his treatment of the patient on March 28, when, although the tube was actually in the bladder, he did not diagnose a foreign body or order an *x*-ray examination. The learned judge dealt with this incident very exhaustively in his judgement, and came to the conclusion that if the patient had exhibited great agony in passing water a surgeon of Mr. Winsbury-White's experience would inevitably have been put on his guard. The expert witnesses declared that stone and the ordinary causes of obstruction are detected by passing a sound, and that the present accident was almost impossible and would not occur to the mind of anyone. He therefore

found that Mr. Winsbury-White, on March 28, did all that an ordinary, skilful, and careful surgeon could have been expected to do on the information which he had at that time—for his lordship was satisfied that the intense pain mentioned by Mr. Morris and Dr. Dawson had not been brought to the mind of the surgeon. In any event, in his view the only damage which resulted from the failure to make a radiological examination was severe pain and discomfort until April 11. He was also satisfied that the presence of the tube aggravated the perineal fistula and made it become chronic, so that it could not have been cured without a further operation; the evidence, however, showed that this could have been performed much more satisfactorily and easily within a short period after his final discharge. He therefore saw no ground for attributing all the period of inconvenience which the plaintiff had since suffered to the presence of this tube in the bladder, but regarded a large part of it as due to the rectal condition. Counsel invited the learned judge to assess damages in case the Court of Appeal should find that the surgeon had been negligent, but his Lordship preferred to leave any higher court to assess the damages themselves, which he said they could easily do from the material before them.

A POSSIBLE EXPLANATION

It is, of course, no part of a court's duty to formulate a theory to explain how an accident happened. It is not even part of the defendant's duty unless the case is one of those in which *res ipsa loquitur*, which the learned judge said this was not. The expert witnesses, however, suggested the following theory, and his lordship accepted it. At some time between the second operation and the patient's discharge, whether by negligence or not, the perineal tube lost its anchoring safety-pin. Without the pin the tube would tend to be drawn into the body by the movement of the pelvic muscles and the normal negative pressure of the bladder. A nurse or medical officer, finding no sign of a tube, might then conclude that it had dropped out and insert another one, thereby pushing the first tube further into the body. A similar accident happened in the case of James *v.* Probyn (*British Medical Journal*, 1935, **1**, 1245). The tube in that case was an empyema drainage tube, and the learned judge suggested that it had probably slipped into the body because some person unknown, instead of properly removing it, and either cleaning it and replacing it or inserting instead of it a second tube with a safety-pin attached, merely cut off the outer end to shorten it and left it unanchored. In that case, as in this one, the surgeon, not having been present, was not responsible for the negligent act—if there was one—of the unknown person.

Mr. Justice Tucker also found that the surgeon had committed no negligence in discharging the patient on February 11. As this decision is subject to appeal, it would not be proper to comment now upon any matter upon which the Court of Appeal might later have to pass judgement. It is sufficient to remark that the task of no one was made easier by the fact that all the evidence was three and a half years old. Recollections of witnesses must fade after such an interval, and the two resident medical officers who had had charge of the patient had left the hospital and all trace of them had been lost. Six years, or even three, is a long statutory limit for actions which turn on the memory of acts and conversations which form an ordinary part of the professional life of a witness. Secondly, this case seemed essentially to be one of those which are better tried by a judge sitting alone (as it was) rather than by a jury. With the notorious case of Russell *v.* Hey Groves (*British Medical Journal*, 1932, **1**, 1152 and 1197) in mind, an observer may well have been glad that the surgeon in this case ran no risk of having to pay damages merely because the patient had suffered injury without good evidence of negligence. Thirdly, Mr. Winsbury-White deserves well of the profession for his courage in defending this action instead of asking his defence society to settle it. His evidence under cross-examination was a model of clarity and restraint which other medical witnesses would do well to follow. The more of these actions for negligence which are successfully defended the less will be the inducement in future to dissatisfied patients to risk action on insufficient grounds. Mr. Winsbury-White made one mistake, however: he ought not to have thrown away the tube he removed at operation. In this case its identity was established to the satisfaction of the learned judge by secondary evidence, but in many legal disputes the injurious foreign body itself is a vital piece of evidence. A medical man who finds himself in a situation out of which legal proceedings may possibly arise should preserve every piece of material and documentary evidence he can.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

During the month of October the title of the degree of M.B. was conferred by diploma on Mrs. H. E. Dimsdale of Girton College.

At a congregation held on November 12 the following medical degrees were conferred:

M.B., B.CHIR.—G. E. Yardley, C. H. C. Ferguson, A. Cursham.
M.B.—*A. M. Rhydderch, J. G. Connell, H. F. Bateman.
* By proxy.

UNIVERSITY OF LONDON

A course of three lectures on the Artificial Transmutation of Matter will be given at King's College, Strand, W.C., by Professor James Chadwick, F.R.S., at 5.30 p.m., on December 2, 7, and 8. Admission free, without ticket.

UNIVERSITY COLLEGE, HULL

At a meeting of the Council, held on November 13, Dr. John Morrison was appointed a part-time lecturer in the Department of Education.

UNIVERSITY OF MANCHESTER

Dr. H. W. Clegg has been appointed Assistant Lecturer in Bacteriology.

UNIVERSITY OF SHEFFIELD

At a meeting of the University Council, held on November 12, Dr. H. J. Barrie was appointed Demonstrator in Pathology.

UNIVERSITY OF GLASGOW

The following medical degrees were conferred on November 13:

M.D.—*J. L. Horne, *Eliza M. K. Stevenson, R. A. Wilson.
M.B., CH.B.—K. Macl. MacKenzie.
* With high commendation.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

THE BUCKSTON BROWNE DINNER

The tenth annual Buckston Browne dinner to Fellows and Members of the Royal College of Surgeons was held at the College on November 11, with the President, Sir Cuthbert Wallace, in the chair.

In the first of the only two speeches of the evening Sir Cuthbert Wallace briefly reviewed the work of the College during the past year. He was glad to announce that the King had agreed to accept the title of Visitor to the College. The second great event was the coming completion of the Bernhard Baron laboratories, which were to be opened on December 8 by the Earl of Athlone, and a distinguished Fellow of the College, Sir Charles Sherrington, was to reply on this occasion. Sir Cuthbert thanked the Building Committee for the excellent work they had done, and especially the chairman, Sir Alfred Webb-Johnson. He would like to say something about the work that had been done in experimental surgery, including such problems as traumatic shock, intestinal strangulation, intrathoracic surgery, and the relation of the hypothalamus to carbohydrate metabolism. This work had been continued with the assistance of St. Bartholomew's Hospital and of Sir Henry Dale. He was glad to record that both the Membership and the Fellowship of the College were increasing, and primary examinations for the Fellowship were now being held at Melbourne, Sydney, Dunedin, Bombay, and Cairo. This year was the first time an examination had been held in Cairo, and he would draw attention to the fact that every Christmas the Conjoint Board sent out an inspector to that city. The College, he continued, was grateful for the generous gifts it had received from the Bernhard Baron Trustees, Lady

Ryall, the *British Journal of Surgery*, the Rockefeller Foundation in New York, and an anonymous donor (who was present at the dinner) for a contribution to the promotion of cancer research. Finally, he reminded those present that the repast that was being enjoyed had been generously given by Sir Buckston Browne, and he proposed the toast of "The Donor."

Sir BUCKSTON BROWNE, whose appearance belied his remark that he was "very old and on the shelf," said that his feast was arranged purely for friendship, so that Members of this great College should get to know and be on familiar terms with its Fellows. He reminded the audience that he had been resident at University College Hospital before Listerism was introduced, and it was to his own hospital that Lister had sent his first antiseptic dressings. The greatest influence in his life, Sir Buckston continued, had been Darwin, whose teaching had told us where we came from and what we are. As ministers to the body the medical profession was the greatest in the world, but in his early days it had not been really properly respected and treated. He deplored the fact that more than the members of any other profession its members were liable to legal attacks.

After the dinner a film of the progress of the new building was shown, and the guests spent a pleasant time looking at an exhibition of paintings and drawings by Fellows and Members of the College.

The following is the list of those present:

Mr. P. B. Ascroft, Mr. W. Girling Ball, Dr. Hugh Barber, Mr. Seymour Barling, Mr. William G. Barnard, Dr. J. O. Wakelin Barratt, Prof. John Beattie, Dr. G. T. Birdwood, Mr. Victor Bonney, Dr. Stanley Bousfield, Mr. L. R. Braithwaite, Dr. A. Clifford Brewer, Sir Buckston Browne, Sir Bruce Bruce-Porter, Mr. A. H. Burgess, Mr. N. C. Carver, Mr. Kennedy Cassels, Dr. A. J. E. Cave, Mr. P. W. Clarkson, Dr. Hugh Clegg, Mr. H. Creemer Cooper, Mr. D. C. Corry, Mr. H. Corsi, Mr. P. T. Crymble, Dr. Ashley S. Daly, Dr. S. H. Daukes, Dr. Arthur Davies, Dr. Daniel Davies, Mr. Hugh Davies, Mr. W. F. Davis, Mr. Harold C. Edwards, Mr. Tudor Edwards, Mr. R. C. Elmslie, Dr. Horace Evans, Mr. C. H. Fagge, Dr. Ian C. Fletcher, Dr. H. T. Flint, Dr. T. F. Fox, Mr. Eric Gardner, Mr. G. E. Gask, Dr. E. A. Gates, Mr. Richard Gillbard, Mr. D. L. H. Goddard, Mr. G. Gordon-Taylor, Sir Charles Gordon-Watson, Dr. A. W. Gott, Mr. F. J. S. Gowar, Dr. E. D. Y. Grasby, Dr. J. L. A. Grout, Mr. Ernest W. Hey Groves, Mr. W. Sampson Handley, Mr. Bishop Harman, Mr. C. I. Heanley, Mr. F. A. Hepworth, Mr. T. S. Heslop, Dr. Charles Hill, Dr. E. Wilson Hird, Mr. L. J. Honeywill, Mr. John Howkins, Prof. A. St. G. Huggett, Mr. J. H. Hughes, Colonel E. T. Inkson, Mr. Harold M. Jaques, Mr. W. H. G. Jessop, Dr. H. B. Jordan, Dr. Alan Kekwick, Mr. R. E. Kelly, Mr. W. R. Le Fanu, Mr. Hugh Lett, Mr. A. L. Light, Mr. Bertram Lloyd, Mr. E. K. Martin, Dr. J. C. Matthews, Mr. P. J. Moir, Dr. G. O. Montgomery, Mr. C. R. Morison, Dr. E. Walter Morris, Dr. H. J. S. Morton, Mr. H. F. Moseley, Dr. A. R. Neligan, Mr. G. E. Neligan, Dr. Charles Newman, Mr. Howard Nicholson, Mr. C. Max Page, Dr. S. Chalmers Parry, Dr. Wilson E. C. Parry, Mr. J. Lewin Payne, Dr. Hugh Powell, Dr. Harold Pritchard, Mr. L. W. Proger, Dr. John Raban, Mr. Walter Radcliffe, Mr. Horace H. Rew, Mr. J. T. Rowe, Dr. R. W. Scarff, Dr. Keith Simpson, Mr. Graham Simpson, Mr. E. G. Slesinger, Dr. W. H. Smailes, Mr. H. S. Souttar, Mr. Evelyn Sprawson, Dr. S. R. Trick, Mr. G. Grey Turner, Mr. J. G. Turner, Dr. H. F. Vanderman, Dr. H. Vane-Sutton, Dr. W. N. P. Wakeley, Mr. Arnold Walker, Mr. H. B. Walker, Sir Cuthbert Wallace, Sir James Walton, Sir Holburt Waring, Mr. Turner Warwick, Sir Alfred Webb-Johnson, Dr. C. F. White.

Council Meeting

A meeting of the Council was held on November 11, with the President, Sir Cuthbert Wallace, Bt., in the chair.

The President reported that the King had consented to assume the post of Visitor to the College.

Diplomas of Membership were granted to the 129 candidates whose names were published in the *Journal* of November 6 (p. 943) in the report of the proceedings of the comitia of the Royal College of Physicians of London, as were the names of the ten candidates to whom the Diploma in Public Health has been granted.

The following hospitals were approved for the six months' surgical practice required of candidates for the final Fellowship: Bolingbroke Hospital, Wandsworth (resident surgical officer and house-surgeon); Kent and Canterbury Hospital (first and second resident house-surgeons).

The President reported that the Mackenzie Mackinnon Research Fellowships of Mr. G. C. Knight and Mr. G. M. Hills had been renewed.

The Bernhard Baron Laboratories of the College will be opened by the Earl of Athlone on Wednesday, December 8.

Medical Notes in Parliament

The business of the House of Lords this week included the Expiring Laws Continuance Bill, and that of the House of Commons the Air Raid Precautions Bill, the National Health Insurance (Juvenile Contributors and Young Persons) Bill, the Blind Persons Bill, and the Workmen's Compensation Bill. The last was a private Member's measure.

On November 15 Sir Kingsley Wood addressed the Conservative Private Members Committee on health questions.

The Registrar-General's Statistical Review of England and Wales for 1936, Part I (Medical) was laid on the table of the House of Commons on November 11.

The Dogs Act (1871) Amendment Bill was presented by Sir Robert Gower and was set down for second reading on December 3. Notice to move its rejection was given by Sir Francis Fremantle, Major Neven-Spence, Mr. Graham Kerr, and Dr. Salter.

Health Insurance for Juveniles

The second reading of the National Health Insurance (Juvenile Contributors and Young Persons) Bill was moved by Sir KINGSLEY WOOD on November 11. He said its object was to fill the gap in the public provision for medical care and attention to boys and girls between their leaving school and their coming under the provisions of the national health insurance scheme, by virtue of insurable employment after the age of 16. It was estimated that a million boys and girls would be affected immediately, but this number would fall with the raising of the school-leaving age, and as a result of the fall in the birth rate during the past fifteen years. The medical service under the Bill would be a full, general practitioner service and would include the supply of all necessary medicines. The cost of the benefit would be met by a weekly contribution, divided equally between the young worker and the employer, together with a fixed contribution from the Exchequer. The services of insurance committees would be used for the provision of medical benefits in the same way as for the present insured persons. There had been no substantial request for cash benefits for juveniles. The new entrants could become members of approved societies and so obtain the full advantages of the main scheme on reaching the age of 16. For those who did not do so, it was provided that their contributions would be paid into a special fund, out of which the cost of their medical benefits would be paid. The solvency of this fund would be guaranteed. The title of the young people to medical benefits would be acquired when the boy or girl first took up insurable employment after leaving school and would continue until the age of 16½, or until the title to full insurance was acquired by reason of insurable employment after the age of 16, whichever happened first. The title of these young persons to medical benefits would not depend upon the amount of their individual contribution.

A LINK WITH THE SCHOOL MEDICAL SERVICE

The Bill linked up the insurance medical service with the school medical service by arrangements under which any insurance doctor who desired to refer to the school medical record of a young patient could obtain particulars and information confidentially. The financial arrangements would cover the whole cost of medical benefits, including administration, and a small margin would be available to provide these young people with earlier dental treatment during a period in which dental decay was sometimes rapid. He would like to see the gap in the provision of dental treatment for young people completely filled, but this would not be possible so long as dental benefit was not a statutory benefit of national health insurance. The gap in provision of this benefit would be shortened by the Bill to about three years,

and he was considering the possibility of amending the regulations so as to give title one year earlier for this class of member. The result would be that there would ordinarily be an interval of less than two years between leaving school and acquiring title to dental benefit under national health insurance. Medical benefit would be given immediately boys or girls became juvenile contributors, and would continue whether they remained continuously employed or not. The period of juvenile membership of an approved society would count towards the qualifying period for additional benefits when the contributor became an ordinary insured person.

Mr. GREENWOOD said he wished the gap between the school-leaving age and entry into national health insurance to be completely abolished. The Bill went a little way in that direction. He was glad that medical benefits were to be given, but when the juvenile between 14 and 16 was out of work there was need for a cash benefit if he was sick. What the Minister would give these young persons by way of medical benefits was negligible. He would draw from them and their employers £800,000 a year, but the benefit would cost £120,000 in the first year, and during the next five years would fall to about £90,000. The Minister should have been bolder and have provided a continuous health service from the cradle to the grave. Sir FRANCIS ACLAND, as chairman of the Dental Board of the United Kingdom, said the gap in dental treatment was serious. They had not the number of school dental officers that there should be, and it was not an encouragement for local authorities to provide an adequate supply of these officers if, after a boy or girl had left school, there was to be a period of four and a half years, during which adolescents were often poisoned by bad teeth, before any public body could help them to have their teeth looked after.

THE CAPITATION FEE

Sir HENRY MORRIS JONES was sorry there was no provision in the Bill for dental and optical benefit. It would be a great help for the medical attendant to have the school medical record of the child, and he hoped a complete medical record of the child's life up to the time he left school would be allowed. Panel practitioners were disappointed at their remuneration under the Bill. The sum of 9s. per head had been adopted for some years for medical attention to adults, and children required more thorough inspection and more frequent visiting. Moreover, under the scheme the medical practitioner would have to keep careful records. A substantial proportion of time which medical practitioners ought to give to prevention and cure was already given to clerical work. He foresaw that before the Government left office the whole life of a person from childhood would be covered. He was rather sorry, because he believed in personal contact between each person and the medical man.

Mr. LOGAN said he did not object to the remuneration of the medical body. If there was ever a body of persons which deserved remuneration for the great work they did, not only in private life but in hospitals, it was the medical profession. Lady ASTOR said it was no good bringing in these patchwork Bills. The nation would soon ask what Parliament was going to do about the fact that 50 per cent. of recruits were turned down for ill-health and 16 per cent. of children in elementary schools were physically defective, although they spent an enormous sum on medicine.

Dr. HADEN GUEST said the Minister had made out the Bill to be better than it was. On the calculations of the 1926 Royal Commission on National Health Insurance there were now approximately 18,168,780 dependants of 35,000,000 insured persons. That large number ought to be brought within the scope of national health insurance. Few approved societies could now give dental benefit, and it was no use to promise young people that benefit in two years, because they needed it when they entered employment. Investigation at Cambridge had shown a high proportion of carious teeth in the mouths of children at the school-leaving age. If these were not treated in the years between 14 and 16 they might cause permanent damage. It would be an excellent national economy to provide medical supervision of children by a doctor who knew them for a long period of their lives.

Sir ERNEST GRAHAM-LITTLE said the years between 14 and 16 were those when physical development occurred and nervous troubles became important. It was high time to fill the gap. The Regius Professor of Physic at Oxford had recently said that many nervous disorders began at this critical period. The adolescent was often put to physical exercise for which his frame was not fitted. Sir Ernest feared that the physical recreation movement would do mischief in many of these cases. Optical benefit was also important. Many cases of disease and disability of the eyes arose in this period.

Mr. BERNAYS assured Lady Astor that the Ministry of Health was alive to the importance of prevention rather than cure. Answering a point raised by Mr. George Griffiths respecting the supply of insulin, he said dependants of insured persons could get insulin free provided their income was not above £250 a year. With regard to dental benefits, 80 per cent. of approved societies, or branches of approved societies, did in fact provide these.

The Bill was read a second time without a division.

The National Health Insurance (Juvenile Contributors and Young Persons) Bill passed through Committee in the House of Commons on November 16.

Serum Therapy in Foot-and-Mouth Disease

Replying to Major Carver on November 11, Mr. W. S. MORRISON said it had been claimed that an immune serum would protect susceptible animals against infection from foot-and-mouth disease for a period not exceeding fourteen days. A serum obtained from a German source had been experimentally used in this country, but in view of the results obtained both in the field and in the laboratory it was decided not to persevere with the experiments. The Foot-and-Mouth Disease Research Committee reported this year that "such serum as is at present available cannot be relied on to protect a bovine from infection when intimately exposed to a highly infective case of disease." Answering further questions on November 15 Mr. Morrison said the most effective prevention of the spread of infection was the prompt slaughter of affected animals and those in immediate contact, so as to stop the propagation of the virus and destroy existing virus by disinfection. It was being shown to-day in Western Europe that alternative methods were not successful in preventing the widespread diffusion of disease. There was no evidence that the present series of outbreaks in England was due to infection introduced by raw animal products, and further measures in regard to the trade in these did not appear necessary. Research work in progress under the Foot-and-Mouth Research Committee at present cost £16,000 a year.

Blind Persons Bill

Moving the second reading of the Blind Persons Bill on November 11, Sir KINGSLEY WOOD said that of 78,000 registered blind persons in England, Wales, and Scotland nearly 57,000 were aged 50 or over, and there were 8,000 blind between the ages of 40 and 50. The number of registered blind persons increased year by year, not from increased incidence of blindness but rather from more complete registration, longer life, and greater inducements to blind persons to register. There had been a substantial fall in the numbers of blind children. The numbers between the ages of 5 and 16 had fallen since 1925 from 3,104 to 1,196. During the year which ended on March 31 only 2.95 per cent. of 8,700 new cases registered as blind persons were under the age of 16 and some 89 per cent. were over the age of 40. The time had come when other local authorities should be put in the same position as those who had already bound themselves to grant domiciliary assistance to blind persons exclusively under the powers of the Blind Persons Act. A clause in the Bill gave effect to this. The first clause in the Bill carried out the recommendation of the Advisory Committee on the Welfare of the Blind that the age for receipt of an old age pension in the case of blind persons should be reduced from 50 to 40 years.

Mr. ARTHUR GREENWOOD said that Great Britain only had about 76,000 registered blind persons, and it would be fai

better to take the blind out of the Old Age Pensions Acts altogether. To-day nearly three-quarters of the blind were over 50. Between the ages of 16 and 40 there were only 9,500 blind people, and the cost of dealing with them would be small. Sir FRANCIS FREMANTLE said that to extend pensions on a flat level according to age, regardless of disabilities, was not scientific; he believed that the needs of the blind could be assessed. The reduction of the number of cases of blindness in children between 5 and 10 to about one-third of what it was twelve years ago was largely due to measures dealing with ophthalmia of the newly born. Mr. LANSBURY did not think physical disability could be assessed in the pseudo-scientific manner in which doctors and others tried to do it. He thought the State should take over the entire cost of assisting the blind. Mr. BERNAYS said that to lower the pensions age for blind persons below 40 would impair the incentive of the blind person to earn a livelihood, which would not be in the interests of the blind themselves. There were 1,200 blind persons below the age of 40, and the cost of giving them pensions from 18 would be £250,000. The Bill was read a second time.

Milk to School Children.—Mr. KENNETH LINDSAY, on November 11, said that only 7 per cent. of the public elementary school children in England and Wales were in schools where the milk-in-schools scheme was not in operation, and as failure to operate the scheme was due to a variety of reasons the number of children unable to obtain milk owing to the county medical officer's refusal to approve the supply must be small. The Minister of Education had no evidence that the power of county medical officers to refuse approval had been unreasonably used. In view of the danger to children of drinking infected milk, he would be very reluctant to do anything to interfere with their discretion in the matter. The suggestion that milk should be supplied in bulk was being considered.

Notes in Brief

From January 1 to October 31, 1937, 811 fatal and 157,842 non-fatal accidents were reported to the Home Office from premises under the Factory Acts. Similar figures for the first ten months of 1936 were 742 fatal and 143,305 non-fatal. Comparative figures for juveniles and adults separately are not available.

An expanded scheme for the control of sleeping sickness in Northern Nigeria came into operation this year. The scheme, which is additional to other methods of control already carried out by the Government, will extend over five years at a cost of £30,000 per annum, of which £19,000 per annum will be provided from the Colonial Development Fund.

The Services

The King has awarded the Royal Naval Volunteer Reserve Officers' Decoration to Surgeon Commander G. A. Clark.

DEATHS IN THE SERVICES

Surgeon Commander HARRY ALEXANDER LEONARD GUTHRIE, R.N. (retired), died in the Royal Naval Hospital at Chatham on November 12. He was educated in the school of the Royal College of Surgeons of Edinburgh, and took the Scottish triple qualifications in 1915. He entered the Navy soon afterwards, attained the rank of Surgeon Lieutenant Commander on July 25, 1923, and retired as Surgeon Commander on June 18, 1928. He served through the war of 1914–18, receiving the medals.

Surgeon Captain EDWYN ROBERT GRAZEBROOK, R.N. (retired), died at Gray Walls, Newport, Barnstaple, on November 5, aged 65. He was educated at King's College, London, and took the M.R.C.S. and L.R.C.P. in 1896. Entering the Navy, he attained the rank of Surgeon Commander on November 10, 1910, and retired as Surgeon Captain on October 15, 1923. He served throughout the war of 1914–18, receiving the medals.

Medical News

A dinner-meeting of the West London Medico-Chirurgical Society will be held at the De Vere Hotel, Kensington Road, W., on Friday, December 3, at 7.45 p.m., when Professor Ferdinand Sauerbruch of Berlin and Mr. Laurence O'Shaughnessy will give addresses on "Surgery of the Heart."

The Institute of British Surgical Technicians has arranged a lecture on "Recent Surgical Procedure," to be given by Mr. A. Dickson Wright at the Welbeck Hotel, Welbeck Street, W., on Friday, November 26, at 8 p.m. Tickets will be issued free to medical practitioners on application to the secretary of the institute, 6, Holborn Viaduct, E.C.1.

A meeting of the Eugenics Society will be held at the rooms of the Royal Society, Burlington House, Piccadilly, W., on Tuesday, November 23, at 5.15 p.m., when Mr. J. C. Trevor will read a paper on "Some Anthropological Considerations of Race Crossing," with Lord Horder in the chair.

The fifth annual dinner of the Voluntary Blood Donors' Association will be held on Thursday, November 25, at the Empire Restaurant, Victoria, S.W., at 7.30 p.m. The principal guest will be Sir Kaye Le Fleming, M.D.

The next quarterly meeting of the Royal Medico-Psychological Association will be held at 11, Chandos Street, W., on Wednesday, November 24, at 2.30 p.m., when Dr. K. C. L. Paddle will read a paper on "The Prophylaxis of Dysentery in Mental Defectives." At 3 p.m. Professor F. L. Golla will deliver the eighteenth Maudsley Lecture on "Science and Psychiatry" at the Royal Society of Medicine, 1, Wimpole Street, W.

A meeting of the Medico-Legal Society will be held at 26, Portland Place, W., on Thursday, November 25, at 8.30 p.m., when a paper will be read by Dr. Julius Burnford on "Food Poisoning."

A sessional meeting of the Royal Sanitary Institute will be held at Hanley Town Hall on Friday, November 26, at 5 p.m., when papers will be read on "Food Poisoning," by Dr. A. Wotherspoon and Dr. A. J. Ewing, and on "The Emission of Industrial Smoke," by Mr. H. Spencer.

The British Health Resorts Association will hold a conference at Bath during the week-end December 3–5 by invitation of the City Corporation. Two discussions have been arranged—on "The Spa as a National Asset in the Maintenance of Physical Fitness," and on "Hydrological Methods in the Treatment of Injuries and Diseases of the Joints."

A meeting was held on November 6 at Claridge's Hotel of editors and assistant editors of medical journals at which general, special, provincial, and hospital journals were represented. It was decided to form a society of medical editors to meet periodically for the discussion of matters of common interest. Sir Humphry Rolleston has consented to be the first president. Further information may be obtained from Mr. E. Watson-Williams, 65, Pembroke Road, Clifton, Bristol 8.

The second American and first Argentine Congress of Urology will be held at Buenos Aires from November 28 to December 4, when the following subjects will be discussed: hydatid disease of the genito-urinary system, genito-urinary tuberculosis, urography, and endoscopic surgery of adenoma of the prostate. The president of the congress is Professor Bernardino Maraini, Santa Fé, Buenos Aires.

The September issue of the *Bulletin de l'Office International d'Hygiène Publique* contains amongst others articles on recent investigations on cholera in India, resistance to small-pox in the vaccinated and unvaccinated, ulcero-necrotic angina in scarlet fever, scarlet fever in the inoculated, and tularaemia in Turkey and Czechoslovakia.

Dr. R. W. Durand, who has been Assistant Secretary to the British Medical Association since December, 1935, has been appointed Secretary of the London and Counties Medical Protection Society. There appears on page 53 an advertisement for an Assistant Secretary to the Association at a salary of £800 rising, after one year, to £900 and thereafter by increments of £50 to £1,250 per annum with the prospect of further increases for capability and length of service. The closing date for applications is Monday, December 6.

A course of experimental biology applicable to gynaecology has been organized by the gynaecological clinic of the Paris Medical Faculty. It will start on November 29. The fee is 300 francs. Further information can be obtained from Professor Pierre Mocquot, Hôpital Broca, Rue Broca, 111, Paris.

Sir Humphry and Lady Rolleston were "At Home" on November 9 at the Alfred Eichholz Clinic in Great Portland Street, London. The clinic was founded three years ago by the National Institute for the Blind to serve as a centre for physiotherapy by the blind. During the evening blind chartered masseurs gave a demonstration of their work.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Secretary, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS should be addressed to the Advertisement Manager. Orders for copies of the *Journal* and communications with reference to subscriptions should be addressed to the Secretary, B.M.A. House, Tavistock Square, W.C.1.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

The TELEGRAPHIC ADDRESSES are
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
SECRETARY, *Medisecra Westcent, London.*

The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh;* telephone: 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin;* telephone 62550 Dublin).

QUERIES AND ANSWERS

Mooren's Ulcer of the Cornea

Dr. GEORGE A. BARTER (Cork) writes: May I ask if any ophthalmologist has any experience in the treatment of ulcus rodens corneae or Mooren's ulcer of the cornea with liver extract or its preparations—that is, campolon, etc.?

Nocturnal Twitching of Lower Limbs

Dr. J. E. H. GATT (Valetta, Malta) writes in answer to "Wilts" (October 30, p. 888): I would advise him to estimate the level of blood calcium on the assumption that his may be a case of endocrine (parathyroid) insufficiency. I may say that I was similarly afflicted quite recently, and my symptoms disappeared after a course of parathyroid gland (tabloid) treatment.

Buccal and Lingual Ulcers

Dr. CHRISTIE MCGUIRE (Dooars, Bengal) writes: In reply to "Puzzled" (*Journal*, September 11, p. 564) I have seen quite a number of buccal and lingual ulcers in the Tropics. They are very painful and usually recurrent. Both microscopically and on culture pneumococci have been found to be the predominant organism, and this has been confirmed by experimental inoculation into mice. Differentiation of strains of the variety of pneumococcus by anti-sera was not done. The treatment found to be the most successful—I should like to say specific—was to touch the ulcers twice or three times daily with a lotion of 1 per cent. Howard's optochin in distilled water. I should be very pleased to hear the results of this treatment.

LETTERS, NOTES, ETC.

Sudden Appearance of White Hair

Dr. R. WORKMAN CARSLAW (Par, Cornwall) writes: The case to be described was seen by me a year ago, and the history is as follows. A woman, aged 24 years, had always been healthy, and there was no family history of early greyness. Her physical condition was good and her hair of a dark-brown colour. Her attention was called one afternoon by a sister to a lock of hair over the back of the head which appeared white at the roots. This lock of hair grew entirely white. A month later a similar lock of white hair grew in the fore part of the scalp. She was emphatic that she had had no fright or emotional disturbance prior to the appearance of the white hair. Now, a year from the first appearance, the locks of hair are still pure white and she has no other white hairs. Cases of profuse and sudden appearance of white hair at an early age are, I believe, rare. I can from the literature find nothing to suggest its aetiology, and would be interested to hear of any suggestions.

Need for an X-Ray Museum

Mr. A. P. BERTWISTLE, F.R.C.S.Ed., writes: In the *Journal* of October 30 (p. 885) is a note which may mark the resurrection of British radiology from the slough into which it has sunk. Benefactions such as this are almost unknown to the science, though money has been given freely to every other ancillary of medicine. Mr. Chester A. Beatty has offered £800, spread over two years, for a studentship, the second year to be spent "in one of the great radiological clinics of the United States." Why should it be necessary to go abroad? I admit the necessity, but why? In the good old days of the *Archives of the Roentgen Ray* Britain, radiologically, was second to none, not even Germany. The establishment of an *x*-ray museum is imperative if British radiologically, was second to none, not even Germany. The museum should contain prints and descriptions, clinical notes, and bottled specimens, the latter features to connect it up with clinical medicine. In this way general practitioners could see what radiology is capable of revealing to them and how it can help them in their daily round. After all, the finished print bears no relation to electricity, and is merely, in the case of the opaque media preparations, a silhouette of a condition which he should know from study of museum specimens. We have the material and radiologists, but organization is absent. So far as I am aware no such museum exists in the world, so that now would appear to be the ideal time to get ahead of other countries. Teaching of a non-technical nature could be carried out. Research could be pursued in a manner impossible under the individualistic conditions prevailing to-day. One has only to glance at that admirable book *The Year Book of Radiology*, edited by Drs. Charles A. Waters and Ira I. Kaplan, to realize the depth to which British radiology has sunk: in spite of our common language there are hardly any British references.

Brown Bread v. White: Disclaimer

Dr. L. J. PICTON writes: I am informed that a letter of mine referring to the quality of bread, a subject raised in your columns by your leader and Dr. Stallybrass's letter, has attracted the attention of the lay press. Such publicity is regrettable. Though the question is of great public interest, the suggestion in my letter would require extended examination by competent authorities (such as that which Dr. Stallybrass suggests) before its public advocacy. I trust that this letter will be accepted as a disclaimer that I have any interest in the matter beyond the medical views expressed in your columns, and that the newspapers which referred to these will also refer to this. May I add that I take particular exception to the publication of an "interview" (I have not read it) which I never gave. In the midst of a busy surgery an excited voice on the telephone asked who made the bread—which I stated—and followed with a number of leading questions. I said I could not stop him reading the *B.M.J.*, but I had nothing to add to what was there. This sort of "interview," on matters concerning our profession, is to be deprecated.